

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

F1_Mice

NTP Study Number: C20725
Lock Date: 10/11/2012
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: 01/25/2016

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2,3-Butanedione
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First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 1

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61373

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

Blood Vessel	Inflammation	Minimal
Note: Kidney		
* Epididymis	Exfoliated Germ Cell	
* Kidney	Nephropathy	Minimal
* Liver	Mixed Cell Focus	
* Thymus	Atrophy	Mild

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 Lab: BNW

ANIMAL ID: 2

TRT#: 1

SEX: Male

DAY ON TEST: 519

DOSE: Control

DISP: Natural Death

HISTO: 61374

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Skin	* Testes	* Thymus
* Thyroid Gland	* Trachea		

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Prostate
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Kidney		Lymphoma Malignant	
		Nephropathy	Minimal
* Liver	Hepatocyte	Degeneration	Minimal
Lymph Node	Renal	Lymphoma Malignant	
	Iliac	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-6]		
	[Lymphoma Malignant TGLs = 2-12]		
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-7]		
* Spleen		Hematopoietic Cell Proliferation	Mild
		Lymphoma Malignant	
	[Hematopoietic Cell Proliferation TGLs = 1-5]		

PRIMARY CAUSE OF DEATH - Spleen Lymphoma Malignant

* PROTOCOL REQUIRED TISSUE

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First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 3

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61375

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Heart	Valve	Inflammation	Chronic Active, Minimal
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Carcinoma	
	[Basophilic Focus TGLs = 1-5]		
	[Hepatocellular Carcinoma TGLs = 2-6]		
* Stomach, Glandular	Epithelium	Hyperplasia	Minimal

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Lab: BNW

ANIMAL ID: 4

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61376

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Epididymis	Exfoliated Germ Cell	
* Intestine Large, Cecum	Inflammation	Mild
* Kidney	Nephropathy	Minimal
* Lymph Node, Mandibular	Hyperplasia	Lymphoid, Minimal
	Infiltration Cellular	Plasma Cell, Minimal
* Lymph Node, Mesenteric	Hyperplasia	Lymphoid, Mild

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 Lab: BNW

ANIMAL ID: 5

TRT#: 1

SEX: Male

DAY ON TEST: 686

DOSE: Control

DISP: Natural Death

HISTO: 61377

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Nose	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Gallbladder

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Heart		Necrosis	Marked
		Polyarteritis	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 1,2,3-5+12+13]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
		Thrombosis	Minimal
* Lymph Node, Mesenteric		Ectasia	Mild
		Hematopoietic Cell Proliferation	Minimal
* Pancreas	Acinus	Atrophy	Marked

* PROTOCOL REQUIRED TISSUE

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Lab: BNW

ANIMAL ID: 5

TRT#: 1

SEX: Male

DAY ON TEST: 686

DOSE: Control

DISP: Natural Death

HISTO: 61377

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Hematopoietic Cell Proliferation	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
* Thymus		Atrophy	Mild

PRIMARY CAUSE OF DEATH - Heart Necrosis
CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

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Lab: BNW

ANIMAL ID: 6

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61378

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Thymus		Cyst	

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 Lab: BNW

ANIMAL ID: 7

TRT#: 1

SEX: Male

DAY ON TEST: 667

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61379

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic	* Kidney
* Larynx	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia Lymphoma Malignant	Marked
* Eye	Cornea, Epithelium Cornea	Hyperplasia Inflammation Adenoma	Minimal Acute, Minimal
* Harderian Gland [Adenoma TGLs = 3-11]			
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Small, Duodenum [Lymphoma Malignant TGLs = 11-14]		Lymphoma Malignant	
* Intestine Small, Ileum [Lymphoma Malignant TGLs = 14-18]		Lymphoma Malignant	
* Intestine Small, Jejunum [Lymphoma Malignant TGLs = 12,13-16+17]		Lymphoma Malignant	
* Liver	Hepatocyte Hepatocyte	Degeneration Hepatocellular Carcinoma Necrosis	Marked Multiple Marked

* PROTOCOL REQUIRED TISSUE

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Species/Strain: MICE/B6C3F1

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 2,3-Butanedione
CAS Number: 431-03-8

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First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 7

TRT#: 1

SEX: Male

DAY ON TEST: 667

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61379

ORGAN AND ACCOUNTABLE SITE STATUS

[Hepatocellular Carcinoma TGLs = 6,7,15,16,17-5+12+13+14]

* Lung		Lymphoma Malignant
Lymph Node	Renal	Lymphoma Malignant
	Pancreatic	Lymphoma Malignant

Note: TGLS 9-12 = NCL

[Lymphoma Malignant TGLs = 8-6]

[Lymphoma Malignant TGLs = 5-13]

* Lymph Node, Mandibular		Lymphoma Malignant
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[Lymphoma Malignant TGLs = 1-8]

* Lymph Node, Mediastinal		Lymphoma Malignant
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[Lymphoma Malignant TGLs = 2-3]

* Lymph Node, Mesenteric		Lymphoma Malignant
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[Lymphoma Malignant TGLs = 10-15]

* Nose	Olfactory Epi	Metaplasia	Respiratory, Minimal
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* Pancreas		Lymphoma Malignant
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* Spleen		Lymphoma Malignant
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[Lymphoma Malignant TGLs = 4-5]

* Stomach, Forestomach		Lymphoma Malignant
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* Thymus		Lymphoma Malignant
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PRIMARY CAUSE OF DEATH - Lymph Node, Mesenteric Lymphoma Malignant

* PROTOCOL REQUIRED TISSUE

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 Species/Strain: MICE/B6C3F1

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 Lab: BNW

ANIMAL ID: 8

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61380

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	
	Hepatocyte	Necrosis	Minimal
	[Hepatocellular Adenoma TGLs = 1-12]		
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[Alveolar/Bronchiolar Carcinoma TGLs = 2-4]		
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

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Species/Strain: MICE/B6C3F1

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Lab: BNW

ANIMAL ID: 9

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61381

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Islets, Pancreatic	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Intestine Large, Cecum		Inflammation	Mild
* Intestine Small, Ileum		Inflammation	Minimal
* Intestine Small, Jejunum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal
[Hyperplasia TGLs = 1-7]			
* Thymus		Atrophy	Minimal
		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

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 Lab: BNW

ANIMAL ID: 10

TRT#: 1

SEX: Male

DAY ON TEST: 590

DOSE: Control

DISP: Natural Death

HISTO: 61382

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Heart		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 6-14]		
* Kidney		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 8-12]		
* Larynx	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Adenoma	Multiple
		Hepatocholangiocarcinoma	Multiple
[Hepatocellular Adenoma	TGLs = 13,14-5+15]		
[Hepatocholangiocarcinoma	TGLs = 10,11,12-5+13+14]		
* Lung		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 2,3,4,5-4+6]		
Lymph Node	Renal	Hepatocholangiocarcinoma	Metastatic (Liver)
Note: Renal lymph node (TGL9-12) identified by gross obs			
[Hepatocholangiocarcinoma	TGLs = 9-12]		
* Lymph Node, Bronchial		Hepatocholangiocarcinoma	Metastatic (Liver)
* Lymph Node, Mediastinal		Hepatocholangiocarcinoma	Metastatic (Liver)

* PROTOCOL REQUIRED TISSUE

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Lab: BNW

ANIMAL ID: 10

TRT#: 1

SEX: Male

DAY ON TEST: 590

DOSE: Control

DISP: Natural Death

HISTO: 61382

ORGAN AND ACCOUNTABLE SITE STATUS

Mesentery	Artery	Thrombosis	Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Lateral Wall	Inflammation	Chronic Active, Moderate
	Turbinate	Polyp	
Skeletal Muscle		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 7-13+15]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
		Inflammation	Minimal
* Thymus		Atrophy	Mild
		Ectopic Parathyroid Gland	Minimal
		Hepatocholangiocarcinoma	Metastatic (Liver)
Tooth		Dysplasia	Mild

PRIMARY CAUSE OF DEATH - Liver Hepatocholangiocarcinoma

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 Lab: BNW

ANIMAL ID: 11

TRT#: 1

SEX: Male

DAY ON TEST: 634

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61383

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Nose	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Intestine Small, Ileum		Sarcoma	Metastatic (Uncertain Primary Site)
* Intestine Small, Jejunum		Sarcoma	Metastatic (Uncertain Primary Site)
	[Sarcoma TGLs = 8-6]		
* Liver		Cyst	
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
		Sarcoma	Metastatic (Uncertain Primary Site)
	[Cyst TGLs = 3-13]		
	[Hepatocellular Adenoma TGLs = 9-12, 4-5]		
	[Hepatocellular Carcinoma TGLs = 6,10-15+16]		
	[Sarcoma TGLs = 5-14]		
* Lymph Node, Mediastinal		Sarcoma	Metastatic (Uncertain Primary Site)
* Lymph Node, Mesenteric		Sarcoma	Metastatic (Uncertain Primary Site)
	[Sarcoma TGLs = 7-12]		
Mesentery		Sarcoma	Metastatic (Uncertain Primary Site)
	[Sarcoma TGLs = 1,2-6+13]		
* Pancreas		Sarcoma	Metastatic (Uncertain Primary Site)

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 11

TRT#: 1

SEX: Male

DAY ON TEST: 634

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61383

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Hematopoietic Cell Proliferation	Minimal
* Stomach, Forestomach	Sarcoma	Metastatic (Uncertain Primary Site)
* Thymus	Atrophy	Mild
	Sarcoma	Metastatic (Uncertain Primary Site)

PRIMARY CAUSE OF DEATH - Mesentery Sarcoma Uncertain Primary Site

CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 12

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61384

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 2-12]		
* Lung		Alveolar/Bronchiolar Adenoma	Multiple
		Hepatocellular Carcinoma	Metastatic (Liver)
		Mineralization	Minimal
	[Alveolar/Bronchiolar Adenoma TGLs = 1-4]		
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 13

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61385

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Intestine Large, Cecum		Inflammation	Mild
* Intestine Small, Ileum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
	[Basophilic Focus TGLs = 1-6]		
* Stomach, Forestomach		Inflammation	Minimal
* Thymus		Atrophy	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 14

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61386

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow		Lymphoma Malignant	
* Epididymis		Exfoliated Germ Cell	
* Liver		Mixed Cell Focus	
[Mixed Cell Focus TGLs = 3,4,5-5+12+13]			
* Lung		Alveolar/Bronchiolar Adenoma	
[Alveolar/Bronchiolar Adenoma TGLs = 1-6]			
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
Mesentery		Lymphoma Malignant	
	Fat	Necrosis	Mild
[Necrosis TGLs = 2-12]			
* Nose	Lateral Wall	Inflammation	Chronic Active, Minimal
* Spleen		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 15

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61387

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Cecum		Inflammation	Minimal
* Liver		Mixed Cell Focus	
	[Mixed Cell Focus TGLs = 1,2-6+12]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
	[Hyperplasia TGLs = 3-12]		
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Minimal
		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Thyroid Gland		Inflammation	Chronic Active, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 16

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61388

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 17

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61389

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Epididymis	Exfoliated Germ Cell	
* Kidney	Metaplasia	Osseous, Minimal
	Nephropathy	Minimal
* Liver	Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-6+12]	
* Seminal Vesicle	Dilatation	Minimal
* Thymus	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 18

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61390

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
[Hepatocellular Adenoma TGLs = 2,3,4-5+6+12]			
* Testes	Seminif Tub	Degeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 19

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61391

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

* Trachea

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Intestine Small, Ileum		Lymphoma Malignant	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-6+12]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-12]		

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 20

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61392

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Liver		Clear Cell Focus	
		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-6]		
* Nose	Respirat Epith	Hyperplasia	Minimal
	Olfactory Epi	Metaplasia	Squamous, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 21

TRT#: 1

SEX: Male

DAY ON TEST: 442

DOSE: Control

DISP: Natural Death

HISTO: 61393

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Rectum
* Islets, Pancreatic	* Kidney	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum		

OBSERVATIONS

* Larynx		Inflammation	Suppurative, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver	Hepatocyte	Necrosis	Minimal
[Necrosis TGLs = 1-12]			
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocyte Necrosis

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 22

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61394

ORGAN AND ACCOUNTABLE SITE STATUS

[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]
* Seminal Vesicle
[Dilatation TGLs = 6-9]

Dilatation

Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 23

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61395

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Intestine Large, Cecum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Basophilic Focus	
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 24

TRT#: 1

SEX: Male

DAY ON TEST: 683

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61396

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	Lymph Node	* Lymph Node, Mandibular	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Lymph Node, Mediastinal * Thymus

OBSERVATIONS

Blood Vessel		Inflammation	Minimal
Note: Mesenteric lymph node			
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
		Inflammation	Mild
* Kidney		Nephropathy	Mild
* Liver		Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma	TGLs = 1,2,3-12+13+14]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	Alveolar Epith	Hyperplasia	Focal, Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Mediastinum	Inflammation	Chronic Active, Minimal
		Thrombosis	Minimal
[Hyperplasia	TGLs = 4-4]		
* Lymph Node, Mesenteric		Hepatocellular Carcinoma	Metastatic (Liver)
* Spleen		Hematopoietic Cell Proliferation	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 24

TRT#: 1

SEX: Male

DAY ON TEST: 683

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61396

ORGAN AND ACCOUNTABLE SITE STATUS

* Testes

Seminif Tub

Degeneration

Mild

* Urinary Bladder

Angiectasis

Minimal

PRIMARY CAUSE OF DEATH

- Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 25

TRT#: 1

SEX: Male

DAY ON TEST: 641

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61397

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mesenteric	* Thymus
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Minimal
		Hepatocellular Carcinoma	Metastatic (Liver)
* Larynx		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver		Hepatocellular Carcinoma	Multiple
		Pigmentation	Ceroid, Mild
	[Hepatocellular Carcinoma TGLs = 1-6]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 2,3,4,5,6,7-4+12+13+14+15+16]		
* Testes	Seminif Tub	Degeneration	Moderate

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma
 CONTRIBUTORY CAUSE OF DEATH - Lung Hepatocellular Carcinoma Liver

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 26

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61398

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Nose	Lateral Wall	Inflammation	Chronic Active, Moderate
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
Tooth		Dysplasia	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 27

TRT#: 1

SEX: Male

DAY ON TEST: 666

DOSE: Control

DISP: Natural Death

HISTO: 61399

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial

AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum * Intestine Small, Ileum

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Brain		Inflammation	Acute, Mild
[Inflammation TGLs = 1-1]			
* Heart		Inflammation	Acute, Minimal
		Thrombosis	Mild
* Kidney		Inflammation	Mild
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild
* Spleen		Inflammation	Minimal
* Thyroid Gland		Cyst	

PRIMARY CAUSE OF DEATH - Brain Inflammation

CONTRIBUTORY CAUSE OF DEATH - Heart Inflammation

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 28

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61400

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Epididymis		Exfoliated Germ Cell	
		Inflammation	Minimal
* Harderian Gland		Hyperplasia	Minimal
	[Hyperplasia TGLs = 1-11]		
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 2-5]		
* Lung		Alveolar/Bronchiolar Adenoma	
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[Alveolar/Bronchiolar Adenoma TGLs = 3-4]		

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 29

TRT#: 1

SEX: Male

DAY ON TEST: 519

DOSE: Control

DISP: Natural Death

HISTO: 61401

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Nose
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Testes
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Bone Marrow	* Eye	* Gallbladder	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Pancreas	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea			

OBSERVATIONS

* Heart	Polyarteritis	Mild
* Kidney	Nephropathy	Mild
* Liver	Hepatocellular Carcinoma	
[Hepatocellular Carcinoma TGLs = 1-12]		
Mesentery	Hemorrhage	Mild
[Hemorrhage TGLs = 2-13]		

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 30

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61402

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Brain		Necrosis	Chronic, Mild
* Epididymis		Exfoliated Germ Cell	
* Heart		Hemangiosarcoma	
* Kidney		Infarct	Mild
		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-5]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 31

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61403

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-5]		
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolus	Infiltration Cellular	Histiocyte, Marked
	[Alveolar/Bronchiolar Carcinoma TGLs = 3-4]		
* Nose		Inflammation	Suppurative, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61404

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Lymph Node, Mediastinal * Thymus

OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Hepatocellular Adenoma	Multiple

[Hepatocellular Adenoma TGLs = 1,2,3,4-5+6+12]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 33

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61405

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver	[Hepatocellular Adenoma TGLs = 1-6]	Hepatocellular Adenoma	
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 34

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61406

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal
* Preputial Gland		Inflammation	Mild

[Inflammation TGLs = 1-8]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 35

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61407

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 37

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61409

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Harderian Gland		Hyperplasia	Mild
[Hyperplasia TGLs = 1-11]			
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	
[Eosinophilic Focus TGLs = 2-5]			
[Hepatocellular Adenoma TGLs = 3-6]			

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 38

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61410

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
[Hepatocellular Carcinoma	TGLs = 1-6]		
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolar Epith	Hyperplasia	Focal, Mild
	Alveolus	Infiltration Cellular	Histiocyte, Mild
[Alveolar/Bronchiolar Carcinoma	TGLs = 2-4]		
* Stomach, Glandular		Inflammation	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 39

TRT#: 1

SEX: Male

DAY ON TEST: 697

DOSE: Control

DISP: Natural Death

HISTO: 61411

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular * Mammary Gland

AUTO PRECLUDES DIAG.

* Intestine Small, Jejunum

OBSERVATIONS

* Epididymis	Infiltration Cellular	Lymphoid, Minimal
* Liver	Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma TGLs = 1,2-12+13]		
* Thymus	Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 40

TRT#: 1

SEX: Male

DAY ON TEST: 722

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61412

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Nose	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	
	[Basophilic Focus TGLs = 6-12]		
	[Hepatodiaphragmatic Nodule TGLs = 5-13]		
* Lung	Alveolus	Alveolar/Bronchiolar Carcinoma	Multiple
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[Alveolar/Bronchiolar Carcinoma TGLs = 4-4]		
* Lymph Node, Mediastinal		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
* Lymph Node, Mesenteric		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
	[Alveolar/Bronchiolar Carcinoma TGLs = 7-7]		
Skeletal Muscle		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
	[Alveolar/Bronchiolar Carcinoma TGLs = 2,3-13+14]		
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Inflammation	Chronic Active, Minimal

PRIMARY CAUSE OF DEATH - Lung Alveolar/Bronchiolar Carcinoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 41

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61413

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Eye	Lens	Cataract	Mild
	Cornea	Inflammation	Acute, Mild
	[Inflammation TGLs = 1-11]		
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 2-11]		
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 4,5-5+6]	Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 3-13]		
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 7-7]		
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 42

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61414

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Esophagus | * Eye |
| * Gallbladder | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic | * Larynx | * Lymph Node, Bronchial | * Lymph Node, Mandibular |
| * Nose | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Preputial Gland | * Prostate | * Salivary Glands | * Seminal Vesicle |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |

MISSING

- * Mammary Gland

INSUFFICIENT TISSUE

- * Intestine Large, Rectum
- * Lymph Node, Mediastinal

OBSERVATIONS

- | | | | |
|--------------------------|---|------------------------------|--------------------|
| * Epididymis | | Exfoliated Germ Cell | |
| * Kidney | | Nephropathy | Minimal |
| * Liver | | Hepatocellular Adenoma | Multiple |
| | [Hepatocellular Adenoma TGLs = 1,2-5] | | |
| * Lung | | Alveolar/Bronchiolar Adenoma | |
| | Interstitialium | Fibrosis | Minimal |
| * Lymph Node, Mesenteric | | Hyperplasia | Lymphoid, Moderate |
| * Testes | Seminif Tub | Degeneration | Minimal |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 43

TRT#: 1

SEX: Male

DAY ON TEST: 624

DOSE: Control

DISP: Natural Death

HISTO: 61415

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Harderian Gland
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Bone Marrow	* Epididymis	* Gallbladder	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Spleen	* Stomach, Glandular
* Testes			

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
* Liver		Hepatocellular Carcinoma	Multiple
	Hepatocyte	Necrosis	Mild
	[Hepatocellular Carcinoma TGLs = 2,3-5+6]		
	Lymph Node	Ectasia	Minimal
	[Ectasia TGLs = 4-6]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
* Thymus		Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 44

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61416

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland	* Thymus
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
		Granuloma Sperm	Mild
		Inflammation	Mild
* Heart		Polyarteritis	Mild
* Kidney		Infarct	Mild
		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
* Skin		Inflammation	Chronic Active, Moderate
	Epidermis	Ulcer	Moderate
[Ulcer TGLs = 1-6]			
* Testes	Seminif Tub	Degeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 45

TRT#: 1

SEX: Male

DAY ON TEST: 555

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61417

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Intestine Small, Duodenum		Hepatoblastoma	Metastatic (Liver)
		Inflammation	Moderate
		Necrosis	Mild
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver		Hepatoblastoma	
	[Hepatoblastoma TGLs = 1-5+12+13]		
* Lung		Hepatoblastoma	Metastatic (Liver)
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Stomach, Glandular		Inflammation	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatoblastoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 46

TRT#: 1

SEX: Male

DAY ON TEST: 674

DOSE: Control

DISP: Natural Death

HISTO: 61418

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Intestine Small, Jejunum

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Testes	Seminif Tub	Degeneration	Minimal

PRIMARY CAUSE OF DEATH

- Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 47

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61419

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx	* Lung
* Nose	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Brain	Lymphoma Malignant	
* Epididymis	Exfoliated Germ Cell	
* Heart	Cardiomyopathy	Minimal
* Intestine Large, Cecum	Inflammation	Mild
* Islets, Pancreatic	Hyperplasia	Minimal
* Kidney	Nephropathy	Minimal
* Liver	Hepatocellular Adenoma	Multiple
	Hepatocellular Carcinoma	
	[Hepatocellular Adenoma TGLs = 2,3-6+12]	
	[Hepatocellular Carcinoma TGLs = 1-5]	
* Lymph Node, Bronchial	Lymphoma Malignant	
* Lymph Node, Mandibular	Lymphoma Malignant	
* Lymph Node, Mediastinal	Lymphoma Malignant	
* Lymph Node, Mesenteric	Hematopoietic Cell Proliferation	Mild
	Lymphoma Malignant	
* Spleen	Lymphoma Malignant	
* Stomach, Glandular	Inflammation	Minimal
* Testes	Seminif Tub	Minimal
* Thymus	Degeneration	
	Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 48

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61420

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Bone Marrow		Mast Cell Tumor Malignant	
* Epididymis		Exfoliated Germ Cell	
* Intestine Large, Cecum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild
* Testes	Seminif Tub	Degeneration	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 49

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61421

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Intestine Small, Duodenum [Polyp Adenomatous TGLs = 5-13]	Polyp Adenomatous	
* Kidney [Cyst TGLs = 4-12]	Cyst Nephropathy	Minimal
* Liver [Hepatocellular Adenoma TGLs = 1,2-12+13]	Basophilic Focus Hepatocellular Adenoma	Multiple
* Lymph Node, Mesenteric	Hyperplasia	Lymphoid, Mild
* Spleen [Hematopoietic Cell Proliferation TGLs = 3-5]	Hematopoietic Cell Proliferation	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 50

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61422

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Metaplasia	Osseous, Minimal
		Nephropathy	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 201

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61673

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Harderian Gland		Adenoma	
* Liver		Cyst	
		Mixed Cell Focus	
[Cyst TGLs = 3-5]			
[Mixed Cell Focus TGLs = 2-6]			
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Moderate
* Spleen		Hyperplasia	Lymphoid, Mild
[Hyperplasia TGLs = 1-5]			

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 202

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61674

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Nose	Olfactory Epi	Atrophy	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 203

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61675

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea

MISSING

* Mammary Gland

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Eye	Lens	Cataract	Minimal
* Harderian Gland		Hyperplasia	Mild
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 7-14]		
* Lung		Alveolar/Bronchiolar Adenoma	
	[Hepatocellular Carcinoma TGLs = 1,2,3,4,5-4+12+13]	Hepatocellular Carcinoma	Metastatic (Liver)
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
* Prostate		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Urinary Bladder		Inflammation	Minimal
	[Inflammation TGLs = 6-9]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 204

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61676

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	
* Nose	Lateral Wall	Inflammation	Chronic Active, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 205

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61677

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Granuloma Sperm	Mild
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	
	[Eosinophilic Focus TGLs = 2-6]		
	[Hepatocellular Adenoma TGLs = 1-12]		
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild
* Stomach, Glandular		Inflammation	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 206

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61678

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 207

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61679

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
	Zona Fasciata	Hypertrophy	Focal, Minimal
* Kidney	Pelvis	Dilatation	Minimal
* Liver		Eosinophilic Focus	
* Nose	Olfactory Epi	Atrophy	Minimal
	Glands, Olfactory Epi	Inflammation	Acute, Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal

[Hyperplasia TGLs = 1-5]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 208

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61680

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thyroid Gland	Follicular Cel	Hyperplasia	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 209

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61681

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Intestine Small, Jejunum		Lymphoma Malignant	
[Lymphoma Malignant TGLs = 2-6]			
* Kidney		Nephropathy	Minimal
* Lung		Alveolar/Bronchiolar Adenoma	
	Alveolar Epith	Hyperplasia	Focal, Mild
[Alveolar/Bronchiolar Adenoma TGLs = 1-4]			
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Turbinate	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 210

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61682

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Gallbladder	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Liver	Eosinophilic Focus	
	Hepatocellular Adenoma	Multiple
[Eosinophilic Focus TGLs = 2-12]		
[Hepatocellular Adenoma TGLs = 3,4-5+6]		

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 211

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61683

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Gallbladder	* Lymph Node, Mediastinal	* Mammary Gland
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Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 212

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61684

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Liver	[Hepatocellular Carcinoma TGLs = 2-6]	Hepatocellular Carcinoma	
* Lung	[Alveolar/Bronchiolar Carcinoma TGLs = 3-4]	Alveolar/Bronchiolar Carcinoma	
* Preputial Gland	[Ectasia TGLs = 1-8]	Ectasia	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 213

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61685

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Kidney		Metaplasia	Osseous, Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2,3-6+12+13]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 4-12]		
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 214

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61686

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Esophagus	Epithelium	Hyperplasia	Mild
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-5]	Tension Lipidosis	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 215

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61687

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Granuloma Sperm	Minimal
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 5-11]		
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-5+12]	Mixed Cell Focus	
	[Mixed Cell Focus TGLs = 3-6]		
* Nose	Olfactory Epi	Atrophy	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 216

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61688

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	
		Mixed Cell Focus	
	[Hepatocellular Adenoma TGLs = 4-13]		
	[Mixed Cell Focus TGLs = 2-6]		
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolar Epith	Hyperplasia	Focal, Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]		
	[Hyperplasia TGLs = 3-4]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 217

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61689

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Epididymis	Exfoliated Germ Cell	
* Liver	Clear Cell Focus	
* Spleen	Hyperplasia	Lymphoid, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 218

TRT#: 3

SEX: Male

DAY ON TEST: 681

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61690

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
		Inflammation	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
	Hepatocyte	Necrosis	Mild
	[Eosinophilic Focus TGLs = 4-12]		
	[Necrosis TGLs = 5-13]		
* Skin		Inflammation	Chronic Active, Moderate
	Epidermis	Ulcer	Moderate
	[Ulcer TGLs = 1,2-12+13]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Seminif Tub	Degeneration	Minimal
* Thymus		Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Skin Epidermis Ulcer

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 219

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61691

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Esophagus | * Eye |
| * Gallbladder | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic | * Larynx | * Lymph Node, Bronchial |
| * Lymph Node, Mandibular | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Stomach, Forestomach |
| * Stomach, Glandular | * Testes | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Mammary Gland

OBSERVATIONS

- | | | | |
|--------------|--|----------------------------------|----------------------|
| * Epididymis | | Exfoliated Germ Cell | |
| * Kidney | | Cyst | |
| | | Nephropathy | Minimal |
| | [Cyst TGLs = 2-13] | | |
| * Liver | | Eosinophilic Focus | |
| | | Hepatocellular Carcinoma | |
| | [Hepatocellular Carcinoma TGLs = 1-12] | | |
| * Lung | | Alveolar/Bronchiolar Adenoma | |
| * Nose | Lateral Wall | Inflammation | Chronic Active, Mild |
| | Respirat Epith | Metaplasia | Squamous, Minimal |
| * Spleen | | Hematopoietic Cell Proliferation | Minimal |
| Tooth | | Dysplasia | Minimal |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 220

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61692

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Subcapsular Zona Fasciata	Adenoma Hypertrophy Nephropathy Mixed Cell Focus	Focal, Minimal Minimal
* Kidney			
* Liver	[Mixed Cell Focus TGLs = 1-6]		
* Nose	Olfactory Epi	Atrophy	Minimal
* Stomach, Forestomach	[Squamous Cell Papilloma TGLs = 2-9]	Squamous Cell Papilloma	

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 221

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61693

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin		Carcinoma	
[Carcinoma TGLs = 1-12]			
* Spleen		Hematopoietic Cell Proliferation	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 222

TRT#: 3

SEX: Male

DAY ON TEST: 480

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61694

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Esophagus	* Parathyroid Gland
* Pituitary Gland	* Trachea		

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Adrenal Medulla	* Bone Marrow	* Epididymis	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex		Lymphoma Malignant	
* Brain		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Lymphoma Malignant	
		Hepatocellular Carcinoma	
		Lymphoma Malignant	
	[Hepatocellular Carcinoma TGLs = 3-13]		
* Lung		Lymphoma Malignant	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-5]		
* Thymus		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 222

TRT#: 3

SEX: Male

DAY ON TEST: 480

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61694

ORGAN AND ACCOUNTABLE SITE STATUS

* Thyroid Gland

Lymphoma Malignant

PRIMARY CAUSE OF DEATH

- Brain Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 223

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61695

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Bone Marrow		Hemangiosarcoma	Metastatic (Spleen)
* Epididymis		Exfoliated Germ Cell	
* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
	Glands, Respirat Epith	Cyst	Moderate
	Lateral Wall	Inflammation	Chronic Active, Mild
* Spleen		Hemangiosarcoma	
		Hematopoietic Cell Proliferation	Minimal
[Hemangiosarcoma TGLs = 2-12]			

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 224

TRT#: 3

SEX: Male

DAY ON TEST: 713

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61696

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 5-12]		
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Harderian Gland		Carcinoma	
	[Carcinoma TGLs = 4-11]		
* Heart	Artery	Histiocytic Sarcoma	Metastatic (Bone)
* Intestine Small, Ileum		Hyperplasia	Lymphoid, Mild
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 3-6]	Histiocytic Sarcoma	Metastatic (Bone)
	[Histiocytic Sarcoma TGLs = 2-13]		
Peripheral Nerve		Degeneration	Minimal
* Preputial Gland		Inflammation	Minimal
Skeletal Muscle		Degeneration	Minimal
* Skin	Epidermis	Hyperplasia	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 224

TRT#: 3

SEX: Male

DAY ON TEST: 713

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61696

ORGAN AND ACCOUNTABLE SITE STATUS

PRIMARY CAUSE OF DEATH - Bone Histiocytic Sarcoma
CONTRIBUTORY CAUSE OF DEATH - Liver Histiocytic Sarcoma Bone

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 225

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61697

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Inflammation	Moderate
[Inflammation TGLs = 1-8]			
* Kidney		Nephropathy	Mild
[Nephropathy TGLs = 6-6]			
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver	Hepatocyte	Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma TGLs = 2,3,5-5+6+12]		Necrosis	Mild
[Necrosis TGLs = 4-13]			
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	Alveolar Epith	Hyperplasia	Focal, Minimal
* Prostate		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 225

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61697

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus

Atrophy

Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocyte Necrosis

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 226

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61698

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 227

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61699

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Islets, Pancreatic		Hyperplasia	Minimal
* Kidney		Metaplasia	Osseous, Minimal
* Liver		Clear Cell Focus	
		Hepatocellular Adenoma	Multiple
[Clear Cell Focus TGLs = 2-6]			
[Hepatocellular Adenoma TGLs = 1,3,4-12+13+14]			
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 228

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61700

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 2,3,4-6+12+13]		
* Preputial Gland		Inflammation	Minimal
	[Inflammation TGLs = 1-8]		
* Thymus		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 229

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61701

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular * Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Nose	Olfactory Epi	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 230

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61702

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 1-11]		
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 2,3,4-5+6+12]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Respirat Epith	Cyst	Moderate
		Inflammation	Suppurative, Minimal
	Lateral Wall	Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Preputial Gland		Inflammation	Mild
* Skin	Epidermis	Hyperplasia	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 231

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61703

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fasciul	Hypertrophy	Focal, Minimal
* Intestine Small, Jejunum		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-12]		
* Liver		Mixed Cell Focus	
	[Mixed Cell Focus TGLs = 5-6]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Spleen		Angiectasis	Minimal
		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-5+12]		
* Thymus		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-3]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 232

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61704

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Liver		Mixed Cell Focus	
[Mixed Cell Focus TGLs = 1-6]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 233

TRT#: 3

SEX: Male

DAY ON TEST: 611

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61705

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Intestine Small, Jejunum

INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Bone Marrow		Hemangiosarcoma	Metastatic (Spleen)
* Heart		Mineralization	Mild
* Kidney		Nephropathy	Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-5]		
* Lung		Thrombosis	
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Spleen		Hemangiosarcoma	
	[Hemangiosarcoma TGLs = 3-5]		

PRIMARY CAUSE OF DEATH - Spleen Hemangiosarcoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 234

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61706

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma
* Harderian Gland		Adenoma
[Adenoma TGLs = 1-11]		
* Liver		Mixed Cell Focus
[Mixed Cell Focus TGLs = 2,3-6+12]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 235

TRT#: 3

SEX: Male

DAY ON TEST: 589

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61707

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Islets, Pancreatic
* Kidney	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum			

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	Hepatocyte	Necrosis	Minimal
		Syncytial Alteration	Minimal
	[Hepatocellular Carcinoma TGLs = 1,2-5+12]		
	[Necrosis TGLs = 3-6]		
	[Syncytial Alteration TGLs = 4-5]		
* Spleen		Hematopoietic Cell Proliferation	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 236

TRT#: 3

SEX: Male

DAY ON TEST: 574

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61708

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Brain	* Epididymis
* Esophagus	* Eye	* Heart	* Kidney
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Testes		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Adrenal Cortex	* Adrenal Medulla	* Bone Marrow	* Gallbladder
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Nose
* Pancreas	* Pituitary Gland	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Harderian Gland		Adenoma	
* Liver		Hepatocellular Carcinoma	
	Hepatocyte	Necrosis	Marked
		Thrombosis	Marked

[Hepatocellular Carcinoma TGLs = 1-6]

PRIMARY CAUSE OF DEATH - Liver Hepatocyte Necrosis

CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 237

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61709

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Liver		Basophilic Focus	
		Tension Lipidosis	Minimal
	[Basophilic Focus TGLs = 1-5]		
* Nose	Turbinate	Atrophy	Mild
	Lateral Wall	Inflammation	Chronic Active, Moderate
		Inflammation	Suppurative, Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
		Inflammation	Minimal
* Stomach, Glandular		Inflammation	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
Tooth		Dysplasia	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 238

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61710

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Gallbladder	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Adrenal Cortex	Subcapsular Zona Fascult	Adenoma Hypertrophy Hyperplasia	Focal, Minimal Mild
* Harderian Gland [Hyperplasia TGLs = 3-11]			
* Liver [Hepatocellular Adenoma TGLs = 1,2-5+6]		Clear Cell Focus Hepatocellular Adenoma	Multiple

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 239

TRT#: 3

SEX: Male

DAY ON TEST: 604

DOSE: 12.5 ppm

DISP: Accidentally Killed

HISTO: 61711

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lung	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia	Mild
* Liver	Hepatocyte	Necrosis	Moderate
Skeletal Muscle		Hemorrhage	Acute, Marked
[Hemorrhage TGLs = 1-12]			
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Stomach, Glandular		Inflammation	Minimal

PRIMARY CAUSE OF DEATH - Skeletal Muscle Hemorrhage

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 240

TRT#: 3

SEX: Male

DAY ON TEST: 653

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61712

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Parathyroid Gland	Peripheral Nerve	* Pituitary Gland	* Salivary Glands
Spinal Cord	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea			

MISSING

* Gallbladder	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Lymphoma Malignant	
* Harderian Gland		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 12-14]		
* Kidney		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 9-6]		
* Liver		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 3,4,5,6,7,8,13-5+6+12+13+14+15+16+19]		
* Lung		Lymphoma Malignant	
Lymph Node	Iliac	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 10-13]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 11-17]		
* Nose		Lymphoma Malignant	
	Respirat Epith	Metaplasia	Squamous, Minimal
* Pancreas		Lymphoma Malignant	
* Preputial Gland		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 240

TRT#: 3

SEX: Male

DAY ON TEST: 653

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61712

ORGAN AND ACCOUNTABLE SITE STATUS

* Prostate		Lymphoma Malignant	
* Seminal Vesicle		Lymphoma Malignant	
Skeletal Muscle		Lymphoma Malignant	
* Skin		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
* Thymus		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-3]		
* Urinary Bladder		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Liver Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 241

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61713

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Adrenal Cortex		Adenoma	
	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 2,3-6+12]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Preputial Gland		Ectasia	Minimal
	[Ectasia TGLs = 1-8]		
* Stomach, Glandular		Inflammation	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 242

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61714

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 243

TRT#: 3

SEX: Male

DAY ON TEST: 653

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61715

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Minimal
* Nose	Turbinate	Atrophy	Minimal
* Skin		Pigmentation	Melanin, Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Thymus		Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 244

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61716

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular Zona Fascult	Adenoma Hypertrophy Infiltration Cellular Nephropathy	Focal, Minimal Lymphocyte, Minimal Minimal
* Kidney			
	[Infiltration Cellular TGLs = 3-6]		
* Liver	[Hepatocellular Adenoma TGLs = 1-5]	Hepatocellular Adenoma	
* Lung	[Alveolar/Bronchiolar Adenoma TGLs = 2-4]	Alveolar/Bronchiolar Adenoma	
* Nose	Olfactory Epi	Atrophy	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 245

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61717

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Gallbladder	* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
	[Hepatocellular Adenoma TGLs = 1-6]	Hepatocellular Adenoma	
* Lung		Alveolar/Bronchiolar Adenoma	
* Nose	Olfactory Epi	Atrophy	Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 246

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61718

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
[Basophilic Focus TGLs = 1-5]			
* Thyroid Gland	Follicular Cel	Adenoma	

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 247

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61719

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver	[Hepatocellular Carcinoma TGLs = 1-6]	Hepatocellular Carcinoma	
* Spleen		Hematopoietic Cell Proliferation	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 248

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61720

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Harderian Gland		Hyperplasia	Mild
	[Hyperplasia TGLs = 1-11]		
* Kidney		Cyst	
	[Cyst TGLs = 3-6]	Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Eosinophilic Focus	
	[Eosinophilic Focus TGLs = 2-5]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 249

TRT#: 3

SEX: Male

DAY ON TEST: 396

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61721

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Bone Marrow

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-5+13]		
Skeletal Muscle		Hemorrhage	Acute, Moderate
		Inflammation	Minimal
		Necrosis	Acute, Moderate
	[Hemorrhage TGLs = 2-12]		
	[Necrosis TGLs = 2-12]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild

PRIMARY CAUSE OF DEATH - Skeletal Muscle Necrosis
 CONTRIBUTORY CAUSE OF DEATH - Skeletal Muscle Hemorrhage

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 250

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61722

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Gallbladder	* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Thymus
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Intestine Small, Jejunum		Inflammation	Mild
* Kidney		Infarct	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	
	[Basophilic Focus TGLs = 2-5]		
	[Hepatocellular Adenoma TGLs = 1-6]		
* Lung		Alveolar/Bronchiolar Carcinoma	
* Nose	Olfactory Epi	Atrophy	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 401

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61573

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-6]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 402

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61574

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma	TGLs = 3,4-5+16]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
[Hepatocellular Carcinoma	TGLs = 1,2,6,7,8-4+12+14+15]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 403

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61575

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Brain	* Epididymis
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Islets, Pancreatic		Hyperplasia	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	Multiple
[Hepatocellular Adenoma	TGLs = 1,2,3-5+12+13]		
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 404

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61576

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Larynx		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 3,4,5,10-5+15+16]		
* Lung		Alveolar/Bronchiolar Adenoma	
	[Alveolar/Bronchiolar Adenoma TGLs = 6-4]	Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 2,7,8,9-6+12+13+14]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
* Preputial Gland		Ectasia	Minimal
	[Ectasia TGLs = 1-8]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 404

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61576

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen

Hematopoietic Cell Proliferation

Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 405

TRT#: 5

SEX: Male

DAY ON TEST: 689

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61577

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic	* Kidney
* Lymph Node, Mediastinal	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Inflammation	Chronic Active, Mild
* Liver		Necrosis	Minimal
	[Hepatocellular Carcinoma TGLs = 7,8,9-12+13+14]	Hepatocellular Carcinoma	Multiple
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 1,2,3,4,5,6-4+6+12+13+14+15]		
* Lymph Node, Mesenteric		Ectasia	Mild
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 405

TRT#: 5

SEX: Male

DAY ON TEST: 689

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61577

ORGAN AND ACCOUNTABLE SITE STATUS

	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Atrophy	Minimal
		Ectopic Parathyroid Gland	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma
CONTRIBUTORY CAUSE OF DEATH - Lung Hepatocellular Carcinoma Liver

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 406

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61578

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	
	[Eosinophilic Focus TGLs = 2-5]		
	[Hepatocellular Adenoma TGLs = 1-6]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 407

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61579

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow		Infiltration Cellular	Mast Cell, Minimal
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Urinary Bladder		Hyperplasia	Lymphoid, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 408

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61580

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Brain		Infiltration Cellular	Lymphocyte, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Infarct	Minimal
		Metaplasia	Osseous, Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	
	[Basophilic Focus TGLs = 2-5]		
	[Hepatocellular Adenoma TGLs = 1-6]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Foreign Body	
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 408

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61580

ORGAN AND ACCOUNTABLE SITE STATUS

Mucosa

Regeneration

Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 409

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61581

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Mild
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 410

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61582

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Intestine Small, Ileum		Hyperplasia	Lymphoid, Mild
	[Hyperplasia TGLs = 2-7]		
* Kidney		Nephropathy	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Lateral Wall	Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Mild
* Testes	Interstit Cell	Hyperplasia	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 410

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61582

ORGAN AND ACCOUNTABLE SITE STATUS

[Hyperplasia TGLs = 1-12]
Tooth

Dysplasia

Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 411

TRT#: 5

SEX: Male

DAY ON TEST: 320

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61583

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Inflammation	Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal
Peripheral Nerve		Degeneration	Minimal

PRIMARY CAUSE OF DEATH - UNCERTAIN

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 412

TRT#: 5

SEX: Male

DAY ON TEST: 719

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61584

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Islets, Pancreatic	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma	TGLs = 2,3-12+14]		
* Lung		Alveolar/Bronchiolar Carcinoma	
[Hepatocellular Carcinoma	TGLs = 4,5,6,7,8,9-4+6+12+13+14+15]	Hepatocellular Carcinoma	Metastatic (Liver)
* Lymph Node, Bronchial		Hematopoietic Cell Proliferation	Mild
		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mediastinal		Hematopoietic Cell Proliferation	Minimal
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 10-7]		
* Nose	Turbinat	Atrophy	Minimal
	Olfactory Epi	Atrophy	Moderate
	Lamina Propria	Fibrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 412

TRT#: 5

SEX: Male

DAY ON TEST: 719

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61584

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
		Lymphoma Malignant	
* Testes	Seminif Tub	Degeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Trachea		Inflammation	Chronic Active, Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma
CONTRIBUTORY CAUSE OF DEATH - Lung Hepatocellular Carcinoma Liver

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 413

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61585

ORGAN AND ACCOUNTABLE SITE STATUS

* Prostate		Carcinoma	Metastatic (Urinary Bladder)
[Carcinoma TGLs = 3-9]			
* Skin	Epidermis	Hyperplasia	Minimal
		Inflammation	Chronic Active, Moderate
	Epidermis	Ulcer	Mild
[Inflammation TGLs = 1-8]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Seminif Tub	Degeneration	Minimal
* Urinary Bladder		Carcinoma	
[Carcinoma TGLs = 2-9]			

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 414

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61586

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Thymus

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	Multiple
	[Eosinophilic Focus TGLs = 3-5]		
	[Hepatocellular Adenoma TGLs = 1,2,4-6+12+13]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Lateral Wall	Inflammation	Chronic Active, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 414

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61586

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 415

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61587

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex [Adenoma TGLs = 9-3]	Subcapsular	Adenoma	
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
* Islets, Pancreatic		Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	
[Clear Cell Focus TGLs = 6-13]			
[Hepatocellular Adenoma TGLs = 4,5,7,8-5+6+14+15]			
[Hepatocellular Carcinoma TGLs = 3-12]			
Lymph Node [Ectasia TGLs = 2-13]	Renal	Ectasia	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 415

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61587

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Lateral Wall	Inflammation	Chronic Active, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Testes	Seminif Tub	Degeneration	Marked
	[Degeneration TGLs = 1-8]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 416

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61588

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Islets, Pancreatic		Adenoma	
* Larynx	Respirat Epith	Metaplasia	Squamous, Mild
* Liver	[Hepatocellular Adenoma TGLs = 2-5]	Hepatocellular Adenoma	
* Lung	Interstitialium	Alveolar/Bronchiolar Carcinoma	Multiple
	Alveolus	Fibrosis	Minimal
	[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]	Infiltration Cellular	Histiocyte, Mild
* Nose	Respirat Epith	Inflammation	Chronic Active, Minimal
	Turbinate	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Atrophy	Moderate
		Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 416

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61588

ORGAN AND ACCOUNTABLE SITE STATUS

Respirat Epith

Necrosis

Minimal

Mucosa

Regeneration

Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 417

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61589

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal
* Preputial Gland		Inflammation	Mild

[Inflammation TGLs = 1-8]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 418

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61590

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Liver		Clear Cell Focus	
		Hepatocellular Carcinoma	Multiple
[Hepatocellular Carcinoma	TGLs = 1,2,3,4-5+6+12+13]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 419

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61591

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 420

TRT#: 5

SEX: Male

DAY ON TEST: 706

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61592

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Islets, Pancreatic	* Liver	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Spleen	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lymph Node, Bronchial	* Stomach, Forestomach	* Stomach, Glandular	* Trachea

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Lymphoma Malignant	
* Kidney		Metaplasia	Osseous, Minimal
* Lung		Lymphoma Malignant	
Lymph Node	Renal	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 4-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 7-7]		
* Nose		Foreign Body	
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Mucosa	Regeneration	Minimal
* Pancreas		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 6-5]		
* Preputial Gland		Inflammation	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 420

TRT#: 5

SEX: Male

DAY ON TEST: 706

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61592

ORGAN AND ACCOUNTABLE SITE STATUS

[Inflammation TGLs = 1-8]

* Prostate

* Seminal Vesicle

* Skin

Subcut Tiss

Subcut Tiss

Epidermis

Lymphoma Malignant

Lymphoma Malignant

Cyst Epithelial Inclusion

Inflammation

Necrosis

Moderate

Suppurative, Marked

Moderate

PRIMARY CAUSE OF DEATH

- Pancreas Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 421

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61593

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Lung		Alveolar/Bronchiolar Adenoma	
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
[Alveolar/Bronchiolar Adenoma	TGLs = 1-4]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 422

TRT#: 5

SEX: Male

DAY ON TEST: 723

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61594

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Ileum	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Thyroid Gland	* Trachea

MISSING

* Islets, Pancreatic	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Jejunum
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Hepatocholangiocarcinoma	Metastatic (Liver)
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Inflammation	Chronic Active, Minimal
* Liver		Necrosis	Minimal
[Hepatocholangiocarcinoma	TGLs = 4,5,6,7-5+12+13+14]	Hepatocholangiocarcinoma	
* Lung		Hepatocholangiocarcinoma	Metastatic (Liver)
	Alveolar Epith	Hyperplasia	Focal, Moderate
[Hepatocholangiocarcinoma	TGLs = 3-12]		
* Lymph Node, Mediastinal		Hepatocholangiocarcinoma	Metastatic (Liver)
* Lymph Node, Mesenteric		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 10-6]		
Mesentery		Hepatocholangiocarcinoma	Metastatic (Liver)
[Hepatocholangiocarcinoma	TGLs = 8-15]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 422

TRT#: 5

SEX: Male

DAY ON TEST: 723

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61594

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Pancreas		Hepatocholangiocarcinoma	Metastatic (Liver)
* Prostate		Hepatocholangiocarcinoma	Metastatic (Liver)
* Seminal Vesicle		Hepatocholangiocarcinoma	Metastatic (Liver)
Skeletal Muscle		Hepatocholangiocarcinoma	Metastatic (Liver)
	[Hepatocholangiocarcinoma TGLs = 2,9-14+16]		
* Spleen		Hematopoietic Cell Proliferation	Mild
* Stomach, Glandular		Hepatocholangiocarcinoma	Metastatic (Liver)
* Testes	Seminif Tub	Degeneration	Mild
* Thymus		Ectopic Parathyroid Gland	Minimal
* Urinary Bladder		Hepatocholangiocarcinoma	Metastatic (Liver)

PRIMARY CAUSE OF DEATH - Liver Hepatocholangiocarcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 423

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61595

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
[Eosinophilic Focus	TGLs = 1,3-6+12]		
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 424

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61596

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Mild
* Epididymis		Exfoliated Germ Cell	
* Liver		Mixed Cell Focus	
	[Mixed Cell Focus TGLs = 2-12]		
* Lung		Alveolar/Bronchiolar Adenoma	
	[Alveolar/Bronchiolar Adenoma TGLs = 1-4]		
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 3-12]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 424

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61596

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus

Ectopic Parathyroid Gland

Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 425

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61597

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-6]		
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Moderate
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 426

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61598

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Lung	Alveolar Epith	Hyperplasia	Focal, Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Testes	Seminif Tub	Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 427

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61599

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Lung
- * Pancreas
- * Salivary Glands
- * Stomach, Glandular
- * Urinary Bladder
- Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Lymph Node, Bronchial
- * Parathyroid Gland
- * Seminal Vesicle
- * Thymus
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Islets, Pancreatic
- * Lymph Node, Mediastinal
- * Pituitary Gland
- * Skin
- * Thyroid Gland
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Larynx
- * Lymph Node, Mesenteric
- * Prostate
- * Stomach, Forestomach
- * Trachea

MISSING

- * Gallbladder
- * Mammary Gland

OBSERVATIONS

- * Adrenal Cortex
- * Bone Marrow
- * Epididymis
- * Kidney
- * Liver
- * Lymph Node, Mandibular
- * Nose
- Subcapsular
- Zona Fasciata
- Myeloid Cell
- [Hepatocellular Adenoma TGLs = 1-6]
- [Hepatocellular Carcinoma TGLs = 2,3-5+12]
- Adenoma
- Hypertrophy
- Hyperplasia
- Exfoliated Germ Cell
- Nephropathy
- Hepatocellular Adenoma
- Hepatocellular Carcinoma
- Focal, Minimal
- Mild
- Minimal
- Multiple
- Hyperplasia
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Atrophy
- Atrophy
- Fibrosis
- Inflammation
- Inflammation
- Metaplasia
- Lymphoid, Mild
- Plasma Cell, Minimal
- Minimal
- Mild
- Minimal
- Suppurative, Mild
- Chronic Active, Mild
- Respiratory, Mild
- Respirat Epith
- Olfactory Epi
- Turbinate
- Lamina Propria
- Lateral Wall
- Olfactory Epi

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 427

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61599

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Preputial Gland		Inflammation	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 428

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61600

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Cyst	
		Nephropathy	Moderate
[Cyst TGLs = 5-13]			
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	Multiple
[Hepatocellular Adenoma TGLs = 1-6]			
[Hepatocellular Carcinoma TGLs = 2,3,4-5+12]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 428

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61600

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Mucosa	Regeneration	Mild
* Testes	Seminif Tub	Hematopoietic Cell Proliferation	Mild
		Degeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 429

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61601

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 430

TRT#: 5

SEX: Male

DAY ON TEST: 588

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61602

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Harderian Gland
* Kidney	* Liver	* Lymph Node, Mandibular	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	

INSUFFICIENT TISSUE

* Lymph Node, Mesenteric

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Heart		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
	[Alveolar/Bronchiolar Carcinoma TGLs = 3-6]		
* Islets, Pancreatic		Hyperplasia	Mild
* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	Multiple
	[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]		
* Lymph Node, Bronchial		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
* Lymph Node, Mediastinal		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 4-13]		
* Nose	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 430

TRT#: 5

SEX: Male

DAY ON TEST: 588

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61602

ORGAN AND ACCOUNTABLE SITE STATUS

Skeletal Muscle

Alveolar/Bronchiolar Carcinoma

Metastatic (Lung)

[Alveolar/Bronchiolar Carcinoma TGLs = 2-12]

* Thymus

Alveolar/Bronchiolar Carcinoma

Metastatic (Lung)

PRIMARY CAUSE OF DEATH

- Lung Alveolar/Bronchiolar Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 431

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61603

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	
	Bronchiole, Epithelium	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Pleura	Inflammation	Chronic Active, Mild
	[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mediastinal		Infiltration Cellular	Plasma Cell, Mild
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 431

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61603

ORGAN AND ACCOUNTABLE SITE STATUS

Respirat Epith

Metaplasia

Squamous, Mild

Respirat Epith

Necrosis

Minimal

Mucosa

Regeneration

Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 432

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61604

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
		Adenoma	
	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Clear Cell Focus	
		Hepatocellular Adenoma	
	[Clear Cell Focus TGLs = 1-12]		
	[Hepatocellular Adenoma TGLs = 2-5]		
Mesentery	Fat	Necrosis	Mild
	[Necrosis TGLs = 3-6]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 432

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61604

ORGAN AND ACCOUNTABLE SITE STATUS

	Inflammation	Suppurative, Minimal
Respirat Epith	Metaplasia	Squamous, Minimal
Olfactory Epi	Metaplasia	Respiratory, Mild
Respirat Epith	Necrosis	Minimal
Mucosa	Regeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 433

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61605

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
		Hepatoblastoma	Metastatic (Liver)
* Harderian Gland		Hyperplasia	Mild
	[Hyperplasia TGLs = 2-11]		
* Kidney		Pigmentation	Hemosiderin, Mild
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Clear Cell Focus	
	[Clear Cell Focus TGLs = 10-5]	Hepatoblastoma	
	[Hepatoblastoma TGLs = 9-12]		
* Lung		Alveolar/Bronchiolar Adenoma	
		Hepatoblastoma	Metastatic (Liver)
	Alveolar Epith	Hyperplasia	Focal, Moderate
	[Alveolar/Bronchiolar Adenoma TGLs = 5-4]		
Lymph Node	Pancreatic	Ectasia	Moderate
	Pancreatic	Hepatoblastoma	Metastatic (Liver)

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 433

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61605

ORGAN AND ACCOUNTABLE SITE STATUS

	[Ectasia TGLs = 11-6]		
	[Hepatoblastoma TGLs = 6,12-6+13]		
* Lymph Node, Mediastinal		Hepatoblastoma	Metastatic (Liver)
Mesentery		Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 4-14]		
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Mild
* Pancreas		Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 14-16]		
* Preputial Gland		Ectasia	Mild
	[Ectasia TGLs = 3-8]		
Skeletal Muscle		Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 13-15]		
* Spleen		Hematopoietic Cell Proliferation	Moderate
	[Hematopoietic Cell Proliferation TGLs = 7,8-5]		
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicular Cel	Adenoma	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 434

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61606

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Necrosis	Minimal
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 435

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61607

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Brain		Infiltration Cellular	Lymphocyte, Minimal
* Harderian Gland		Adenoma	
[Adenoma TGLs = 2-11]			
* Liver		Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 1-5]			
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
		Infiltration Cellular	Plasma Cell, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 436

TRT#: 5

SEX: Male

DAY ON TEST: 722

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61608

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Intestine Large, Cecum		Inflammation	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 3,4-5+6]		
* Lung		Alveolar/Bronchiolar Adenoma	
		Alveolar/Bronchiolar Carcinoma	
	[Alveolar/Bronchiolar Adenoma TGLs = 1-4]		
	[Alveolar/Bronchiolar Carcinoma TGLs = 2-4]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
	Mucosa	Regeneration	Minimal

PRIMARY CAUSE OF DEATH - Lung Alveolar/Bronchiolar Carcinoma
 CONTRIBUTORY CAUSE OF DEATH - Lung Alveolar/Bronchiolar Adenoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 437

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61609

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Gallbladder	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
	Mucosa	Regeneration	Minimal
* Stomach, Glandular		Inflammation	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 438

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61610

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland	* Prostate
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Kidney		Nephropathy	Moderate
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 1,2-12+13]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Foreign Body	
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 438

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61610

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Pancreas		Necrosis	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Mild
* Trachea		Inflammation	Chronic Active, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 439

TRT#: 5

SEX: Male

DAY ON TEST: 683

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61611

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Intestine Large, Cecum	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Hepatocellular Carcinoma	Metastatic (Liver)
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 12-14]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 2,3,4,5,6,7,8,9-4+12+13]		
Mesentery		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 10,11-6+15]		
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 439

TRT#: 5

SEX: Male

DAY ON TEST: 683

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61611

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 440

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61612

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 440

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61612

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus

Ectopic Parathyroid Gland

Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 441

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61613

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 1-11]		
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 441

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61613

ORGAN AND ACCOUNTABLE SITE STATUS

* Preputial Gland

Mucosa

Regeneration

Minimal

Inflammation

Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 442

TRT#: 5

SEX: Male

DAY ON TEST: 554

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61614

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Colon
* Intestine Small, Duodenum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Intestine Small, Ileum * Intestine Small, Jejunum

INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Brain		Inflammation	Acute, Minimal
* Epididymis		Exfoliated Germ Cell	
* Heart		Inflammation	Acute, Moderate
[Inflammation TGLs = 4-5]			
* Intestine Large, Cecum		Inflammation	Minimal
[Inflammation TGLs = 3-7]			
* Kidney		Infarct	Moderate
		Inflammation	Moderate
[Infarct TGLs = 1-6]			
* Liver		Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 2-6]			
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 442

TRT#: 5

SEX: Male

DAY ON TEST: 554

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61614

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Stomach, Glandular		Inflammation	Minimal

PRIMARY CAUSE OF DEATH - Kidney Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 443

TRT#: 5

SEX: Male

DAY ON TEST: 527

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61615

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Intestine Large, Rectum	* Thymus
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Moderate
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver	Hepatocyte	Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 3-5+12+13]	Necrosis	Mild
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 443

TRT#: 5

SEX: Male

DAY ON TEST: 527

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61615

ORGAN AND ACCOUNTABLE SITE STATUS

* Skin	Mucosa	Regeneration	Mild
		Hyperkeratosis	Mild
		Inflammation	Chronic Active, Marked
	Subcut Tiss	Necrosis	Moderate
	[Inflammation TGLs = 2-14]		
	[Necrosis TGLs = 2-14]		
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Stomach, Glandular		Mineralization	Minimal
* Testes	Seminif Tub	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 444

TRT#: 5

SEX: Male

DAY ON TEST: 600

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61616

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	* Bone	* Brain	* Epididymis
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Histiocytic Sarcoma	
Blood Vessel	Aorta	Histiocytic Sarcoma	
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Gallbladder		Histiocytic Sarcoma	
* Heart			
Note: Histiocytic sarcoma surrounding the aorta			
* Kidney		Histiocytic Sarcoma	
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Carcinoma	
		Histiocytic Sarcoma	
	[Hepatocellular Carcinoma TGLs = 4,5-5+14]		
	[Histiocytic Sarcoma TGLs = 3,4,6,7-5+12+13]		
* Lung		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 2-4]		
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 10-7]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 444

TRT#: 5

SEX: Male

DAY ON TEST: 600

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61616

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi		Atrophy	Mild
	Turbinate		Atrophy	Minimal
	Lamina Propria		Fibrosis	Minimal
			Inflammation	Suppurative, Minimal
	Respirat Epith		Metaplasia	Squamous, Mild
	Olfactory Epi		Metaplasia	Respiratory, Mild
	Respirat Epith		Necrosis	Minimal
	Mucosa		Regeneration	Minimal
* Pancreas			Histiocytic Sarcoma	
	[Histiocytic Sarcoma	TGLs = 9-6]		
Skeletal Muscle			Histiocytic Sarcoma	
	[Histiocytic Sarcoma	TGLs = 8-6]		
* Spleen			Hematopoietic Cell Proliferation	Mild
* Stomach, Glandular			Histiocytic Sarcoma	
* Testes	Seminif Tub		Degeneration	Minimal
* Thymus			Histiocytic Sarcoma	

PRIMARY CAUSE OF DEATH - Liver Histiocytic Sarcoma
 CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocellular Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 445

TRT#: 5

SEX: Male

DAY ON TEST: 597

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61617

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Kidney
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Islets, Pancreatic		Adenoma	
* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Eosinophilic Focus	
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Glands, Sinus	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 445

TRT#: 5

SEX: Male

DAY ON TEST: 597

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61617

ORGAN AND ACCOUNTABLE SITE STATUS

* Testes	Mucosa	Regeneration	Minimal
	Seminif Tub	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Islets, Pancreatic Adenoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 446

TRT#: 5

SEX: Male

DAY ON TEST: 637

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61618

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Eye	* Harderian Gland	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland	* Thymus
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OBSERVATIONS

* Bone Marrow		Lymphoma Malignant	
* Brain		Lymphoma Malignant	
* Epididymis		Lymphoma Malignant	
* Esophagus		Lymphoma Malignant	
* Gallbladder		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Large, Colon		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Necrosis	Minimal
* Liver		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 5,6,7,8,9,10-5+6+12]		
* Lung		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3,4-4]		
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-13]		
* Nose	Turbinat	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 446

TRT#: 5

SEX: Male

DAY ON TEST: 637

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61618

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Lateral Wall	Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland		Lymphoma Malignant	
* Prostate		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
		Inflammation	Mild
		Necrosis	Minimal
* Stomach, Glandular		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Lymph Node, Mesenteric Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 447

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61619

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Liver		Basophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Focal, Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Mucosa	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 448

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61620

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Heart		Inflammation	Chronic Active, Minimal
* Intestine Small, Jejunum		Hyperplasia	Lymphoid, Mild
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	Multiple
		Mixed Cell Focus	
	[Hepatocellular Adenoma TGLs = 4,5-6+12]		
	[Mixed Cell Focus TGLs = 2-5]		
* Lung		Alveolar/Bronchiolar Carcinoma	
	[Alveolar/Bronchiolar Carcinoma TGLs = 1-4]		
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 448

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61620

ORGAN AND ACCOUNTABLE SITE STATUS

Olfactory Epi	Inflammation	Suppurative, Minimal
Respirat Epith	Metaplasia	Respiratory, Minimal
Mucosa	Metaplasia	Squamous, Mild
	Regeneration	Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 449

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61621

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Metaplasia	Osseous, Mild
* Liver		Basophilic Focus	
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 450

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61622

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Mild
* Epididymis		Exfoliated Germ Cell	
* Kidney		Metaplasia	Osseous, Minimal
		Nephropathy	Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 601

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61473

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Urinary Bladder			

MISSING

* Gallbladder	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 601

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61473

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Marked
[Hematopoietic Cell Proliferation	TGLs = 2-5]		
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Epithelium	Metaplasia	Squamous, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 602

TRT#: 7

SEX: Male

DAY ON TEST: 407

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61474

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Brain	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Gallbladder	* Mammary Gland	* Thymus
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OBSERVATIONS

Blood Vessel		Inflammation	Minimal
Note: Larynx			
* Bone	Maxilla	Osteomalacia	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Artery	Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Mild
* Liver	Hepatocyte	Necrosis	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Bronchial		Pigmentation	Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Mild
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 602

TRT#: 7

SEX: Male

DAY ON TEST: 407

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61474

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Moderate
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Mild
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 603

TRT#: 7

SEX: Male

DAY ON TEST: 340

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61475

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Bronchial		Pigmentation	Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Mild
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 603

TRT#: 7

SEX: Male

DAY ON TEST: 340

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61475

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Atrophy	Moderate
		Cyst	
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 604

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61476

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-5]		
* Lung	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Moderate
	Lymph Node	Deep Cervical	Mild
		Deep Cervical	Lymphoid, Moderate
	[Hyperplasia TGLs = 1-6]	Hyperplasia	
* Nose	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 604

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61476

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Atrophy	Mild
	Glands, Respirat Epith	Cyst	
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Nasopharyn Dct	Polyp, Inflammatory	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
[Hematopoietic Cell Proliferation	TGLs = 3-5]		
* Trachea	Submucosa	Fibrosis	Marked
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Epithelium	Metaplasia	Squamous, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 605

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61477

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial * Lymph Node, Mediastinal * Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	[Inflammation TGLs = 1-11]		
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Liver		Eosinophilic Focus	
		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 2-12]		
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 605

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61477

ORGAN AND ACCOUNTABLE SITE STATUS

* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Marked
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 606

TRT#: 7

SEX: Male

DAY ON TEST: 477

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61478

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland	* Thymus
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Heart		Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
* Lung	Respirat Epith	Regeneration	Minimal
	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
		Infiltration Cellular	Plasma Cell, Minimal
	[Hyperplasia TGLs = 1-8]		
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Necrosis	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 606

TRT#: 7

SEX: Male

DAY ON TEST: 477

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61478

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Mild
Peripheral Nerve		Degeneration	Minimal
Skeletal Muscle		Degeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
	Epithelium	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 607

TRT#: 7

SEX: Male

DAY ON TEST: 717

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61479

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mesenteric

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Larynx	Lumen	Exudate	Moderate
	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Liver		Eosinophilic Focus	
	[Eosinophilic Focus TGLs = 1-6]		
* Lung	Mediastinum	Inflammation	Chronic Active, Mild
	Bronchus	Inflammation	Suppurative, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Lymph Node, Mediastinal		Infiltration Cellular	Plasma Cell, Mild
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 607

TRT#: 7

SEX: Male

DAY ON TEST: 717

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61479

ORGAN AND ACCOUNTABLE SITE STATUS

Lamina Propria	Fibrosis	Moderate
	Inflammation	Suppurative, Marked
Olfactory Epi	Metaplasia	Respiratory, Mild
Respirat Epith	Metaplasia	Squamous, Minimal
Respirat Epith	Necrosis	Mild
Olfactory Epi	Necrosis	Mild
Turbinate	Necrosis	Minimal
Mucosa	Regeneration	Minimal
* Thymus	Inflammation	Chronic Active, Mild
* Trachea	Exudate	Moderate
Lumen	Fibrosis	Moderate
Submucosa	Fibrosis	Minimal
Carina, Submucosa	Inflammation	Chronic Active, Marked
Carina, Submucosa	Mineralization	Minimal
	Necrosis	Marked
Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Trachea Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation
 - Nose Inflammation

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 608

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61480

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Moderate
* Liver		Basophilic Focus	
		Eosinophilic Focus	
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	[Hepatocellular Adenoma TGLs = 2,3-5]		
	[Hepatocellular Carcinoma TGLs = 4-13]		
* Lung		Alveolar/Bronchiolar Adenoma	
	Alveolus	Infiltration Cellular	Histiocyte, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 608

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61480

ORGAN AND ACCOUNTABLE SITE STATUS

	Bronchus, Epithelium	Regeneration	Mild
	[Alveolar/Bronchiolar Adenoma TGLs = 1-12]		
	[Infiltration Cellular TGLs = 5-4]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinates	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Minimal
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Mild
	Epithelium	Regeneration	Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 609

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61481

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
	Cornea	Mineralization	Minimal
	[Inflammation TGLs = 1-11]		
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Liver		Basophilic Focus	
* Lymph Node, Mandibular		Ectasia	Mild
		Hematopoietic Cell Proliferation	Moderate
	[Hematopoietic Cell Proliferation TGLs = 2-8]		
* Nose	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 609

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61481

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Atrophy	Moderate
	Glands, Respirat Epith	Cyst	
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Moderate
	Turbinate	Necrosis	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Mild
	Epithelium	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 610

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61482

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Liver		Basophilic Focus	
		Eosinophilic Focus	
	[Eosinophilic Focus TGLs = 1-6]		
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 610

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61482

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 611

TRT#: 7

SEX: Male

DAY ON TEST: 723

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61483

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
* Lung	Respirat Epith	Regeneration	Minimal
	Bronchus, Epithelium	Regeneration	Mild
	Renal	Hematopoietic Cell Proliferation	Mild
	Pancreatic	Hyperplasia	Lymphoid, Marked
	[Hematopoietic Cell Proliferation [Hyperplasia TGLs = 3-13]		
* Lymph Node, Mandibular	TGLs = 1-6]	Hematopoietic Cell Proliferation	Moderate
		Infiltration Cellular	Plasma Cell, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 611

TRT#: 7

SEX: Male

DAY ON TEST: 723

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61483

ORGAN AND ACCOUNTABLE SITE STATUS

* Lymph Node, Mediastinal		Hematopoietic Cell Proliferation	Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Moderate
	Olfactory Epi	Necrosis	Marked
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Testes	Seminif Tub	Degeneration	Minimal
* Thymus		Atrophy	Minimal
Tissue NOS		Inflammation	Chronic Active, Mild
Note: Glandular tissue in the region of the sciatic lymph nodes [Inflammation TGLs = 2-12]			
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
	Epithelium	Hyperplasia	Mild
	Carina, Epithelium	Hyperplasia	Minimal
		Inflammation	Chronic Active, Moderate
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Mild
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 612

TRT#: 7

SEX: Male

DAY ON TEST: 619

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61484

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Heart		Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 612

TRT#: 7

SEX: Male

DAY ON TEST: 619

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61484

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Trachea	Submucosa	Fibrosis	Mild
	Epithelium	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

CONTRIBUTORY CAUSE OF DEATH - Nose Respirat Epith Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 613

TRT#: 7

SEX: Male

DAY ON TEST: 718

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61485

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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AUTO PRECLUDES DIAG.

* Intestine Small, Jejunum

OBSERVATIONS

* Eye	Cornea	Edema	Minimal
[Edema TGLs = 1-11]			
* Harderian Gland		Adenoma	
[Adenoma TGLs = 2-11]			
* Larynx	Lumen	Exudate	Marked
	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 613

TRT#: 7

SEX: Male

DAY ON TEST: 718

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61485

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Thymus		Atrophy	Minimal
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Marked
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Marked
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Trachea Inflammation

CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 614

TRT#: 7

SEX: Male

DAY ON TEST: 688

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61486

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Bronchial		Ectasia	Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 614

TRT#: 7

SEX: Male

DAY ON TEST: 688

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61486

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Moderate
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Larynx Respirat Epith Metaplasia

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 615

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61487

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Urinary Bladder		

MISSING

* Mammary Gland

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Mild
	Antr Chamber	Inflammation	Suppurative, Moderate
	[Inflammation TGLs = 3-11]		
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolus	Infiltration Cellular	Histiocyte, Moderate
	[Alveolar/Bronchiolar Carcinoma TGLs = 4-4]		
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Moderate
	[Hyperplasia TGLs = 2-6]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mandibular		Ectasia	Mild
		Hyperplasia	Lymphoid, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 615

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61487

ORGAN AND ACCOUNTABLE SITE STATUS

Organ	Accountable Site	Status
* Nose	[Hyperplasia TGLs = 1-8]	
	Turbinate	Atrophy
	Lamina Propria	Fibrosis
		Inflammation
	Olfactory Epi	Metaplasia
	Respirat Epith	Metaplasia
	Glands, Sinus	Metaplasia
	Respirat Epith	Necrosis
	Olfactory Epi	Necrosis
	Septum	Perforation
* Spleen	Mucosa	Regeneration
		Hematopoietic Cell Proliferation
* Trachea	Submucosa	Hyperplasia
		Fibrosis
		Inflammation
	Epithelium	Metaplasia
	Epithelium	Necrosis
	Regeneration	

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 616

TRT#: 7

SEX: Male

DAY ON TEST: 409

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61488

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Thymus
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Eye	Cornea	Inflammation	Acute, Minimal
* Heart		Inflammation	Acute, Mild
* Intestine Small, Ileum [Hemorrhage TGLs = 1-7]		Hemorrhage	Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
* Lung	Respirat Epith	Regeneration	Minimal
	Mediastinum	Inflammation	Suppurative, Minimal
		Inflammation	Suppurative, Minimal
	Pleura	Inflammation	Suppurative, Minimal
* Lymph Node, Bronchial		Inflammation	Chronic Active, Minimal
		Pigmentation	Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Moderate
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 616

TRT#: 7

SEX: Male

DAY ON TEST: 409

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61488

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Necrosis	Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 617

TRT#: 7

SEX: Male

DAY ON TEST: 695

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61489

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea, Epithelium	Hyperplasia	Mild
	Cornea	Inflammation	Acute, Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Mild
	Respirat Epith	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Preputial Gland		Inflammation	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 617

TRT#: 7

SEX: Male

DAY ON TEST: 695

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61489

ORGAN AND ACCOUNTABLE SITE STATUS

* Stomach, Forestomach [Hyperplasia TGLs = 1-12]	Epithelium	Hyperplasia	Minimal
* Testes	Seminif Tub	Degeneration	Mild
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Mild
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 618

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61490

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Kidney		Infarct	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 618

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61490

ORGAN AND ACCOUNTABLE SITE STATUS

* Skin		Inflammation	Chronic Active, Moderate
* Trachea	Submucosa	Fibrosis	Marked
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 619

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61491

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Testes	Interstit Cell	Hyperplasia	Mild
* Trachea	Submucosa	Fibrosis	Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 620

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61492

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Regeneration	Mild
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolus	Infiltration Cellular	Histiocyte, Mild
	Bronchus, Epithelium	Regeneration	Minimal
	[Alveolar/Bronchiolar Carcinoma		
* Nose	TGLs = 1-4]		
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 620

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61492

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus		Ectopic Parathyroid Gland	Minimal
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild
* Urinary Bladder		Mineralization	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 621

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61493

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Lens	Cataract	Mild
	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Moderate
	Antr Chamber	Inflammation	Suppurative, Moderate
	Cornea, Epithelium	Phthisis Bulbi	
		Ulcer	Mild
	[Inflammation TGLs = 1-11]		
	[Phthisis Bulbi TGLs = 3-11]		
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 2-11]		
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 621

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61493

ORGAN AND ACCOUNTABLE SITE STATUS

* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 4-12]		
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
	Lateral Wall	Inflammation	Chronic Active, Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Minimal
* Prostate		Inflammation	Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 622

TRT#: 7

SEX: Male

DAY ON TEST: 560

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61494

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Bone Marrow	* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Jejunum
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Heart		Inflammation	Acute, Moderate
		Necrosis	Mild
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Lung	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
		Infiltration Cellular	Plasma Cell, Mild
* Lymph Node, Mediastinal		Inflammation	Chronic Active, Mild
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 622

TRT#: 7

SEX: Male

DAY ON TEST: 560

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61494

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Necrosis	Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Mild
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 623

TRT#: 7

SEX: Male

DAY ON TEST: 320

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61495

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
Lymph Node	Deep Cervical	Infiltration Cellular	Plasma Cell, Moderate
[Infiltration Cellular TGLs = 2-6]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 623

TRT#: 7

SEX: Male

DAY ON TEST: 320

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61495

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 624

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61496

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Larynx	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Minimal
* Liver		Basophilic Focus	
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Lateral Wall	Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 624

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61496

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea

Submucosa

Fibrosis

Mild

Inflammation

Chronic Active, Minimal

Necrosis

Minimal

Epithelium

Regeneration

Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 625

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61497

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal * Thymus

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Mild
	Antr Chamber	Inflammation	Suppurative, Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 625

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61497

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Preputial Gland		Inflammation	Moderate
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 626

TRT#: 7

SEX: Male

DAY ON TEST: 411

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61498

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 626

TRT#: 7

SEX: Male

DAY ON TEST: 411

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61498

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 627

TRT#: 7

SEX: Male

DAY ON TEST: 332

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61499

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mediastinal
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Thymus
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Moderate
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Moderate
	Olfactory Epi	Necrosis	Moderate
	Septum	Perforation	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 627

TRT#: 7

SEX: Male

DAY ON TEST: 332

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61499

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Mucosa	Regeneration	Mild
* Testes	Seminif Tub	Hematopoietic Cell Proliferation	Mild
* Trachea		Degeneration	Minimal
		Necrosis	Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 628

TRT#: 7

SEX: Male

DAY ON TEST: 680

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61500

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Ileum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Skin
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AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Jejunum
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Exfoliated Germ Cell	
* Harderian Gland		Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
* Liver		Hemangiosarcoma	
	[Hemangiosarcoma TGLs = 1,2,3,4-5+6+12]		
* Lung		Alveolar/Bronchiolar Adenoma	
	Bronchus, Epithelium	Regeneration	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 628

TRT#: 7

SEX: Male

DAY ON TEST: 680

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61500

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Trachea	Submucosa	Fibrosis	Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Liver Hemangiosarcoma

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 629

TRT#: 7

SEX: Male

DAY ON TEST: 666

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61501

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Urinary Bladder		

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Inflammation	Minimal
* Intestine Large, Rectum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
* Liver		Tension Lipidosis	Minimal
* Lung	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Minimal
		Thrombosis	
[Thrombosis TGLs = 1-4]			
* Lymph Node, Mandibular		Hematopoietic Cell Proliferation	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 629

TRT#: 7

SEX: Male

DAY ON TEST: 666

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61501

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Preputial Gland		Inflammation	Mild
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thyroid Gland	Follicular Cel	Hyperplasia	Minimal
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Moderate
	Epithelium	Hyperplasia	Moderate
		Inflammation	Chronic Active, Marked
		Necrosis	Mild
	Epithelium	Regeneration	Mild

PRIMARY CAUSE OF DEATH - Trachea Inflammation

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 630

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61502

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
[Inflammation TGLs = 1-11]			
* Heart		Hemangioma	
		Necrosis	Mild
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 630

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61502

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 631

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61503

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Minimal
Lymph Node	Renal	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 2-13]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-12]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 631

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61503

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Turbinata	Necrosis	Minimal
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
* Pancreas		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 632

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61504

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Turbinate	Atrophy	Moderate
	Glands, Respirat Epith	Cyst	
	Lamina Propria	Fibrosis	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 632

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61504

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus	Mucosa	Regeneration	Moderate
* Trachea		Ectopic Parathyroid Gland	Minimal
	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Inflammation	Chronic Active, Mild
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Carina, Epithelium	Necrosis	Minimal
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 633

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61505

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Epididymis	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Kidney		Metaplasia	Osseous, Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Moderate
* Lung	Bronchus, Epithelium	Regeneration	Mild
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Moderate
[Hyperplasia TGLs = 2-6]			
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 633

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61505

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Mild
	Epithelium	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Carina, Submucosa	Inflammation	Chronic Active, Mild
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Mild
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 634

TRT#: 7

SEX: Male

DAY ON TEST: 551

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61506

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland	* Thymus
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Regeneration	Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Marked
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Olfactory Epi	Necrosis	Moderate
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 634

TRT#: 7

SEX: Male

DAY ON TEST: 551

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61506

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Mucosa	Regeneration	Moderate
	Lymph Follic	Atrophy	Mild
		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 635

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61507

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Moderate
	Cornea, Epithelium	Ulcer	Mild
	[Mineralization TGLs = 1-11]		
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Regeneration	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
		Infiltration Cellular	Plasma Cell, Mild
	[Hyperplasia TGLs = 4-8]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 635

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61507

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Moderate
	Glands, Respirat Epith	Cyst	
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Preputial Gland		Ectasia	Minimal
[Ectasia TGLs = 2-8]			
* Spleen		Hematopoietic Cell Proliferation	Mild
* Testes	Seminif Tub	Degeneration	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Moderate
	Carina, Submucosa	Inflammation	Chronic Active, Minimal
	Epithelium	Metaplasia	Squamous, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 636

TRT#: 7

SEX: Male

DAY ON TEST: 266

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61508

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Rectum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Trachea

INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia Inflammation	Mild Chronic Active, Mild
* Lung	Respirat Epith Mediastinum Pleura Mediastinum	Metaplasia Inflammation Inflammation Necrosis Thrombosis	Squamous, Moderate Suppurative, Mild Suppurative, Mild Mild
* Lymph Node, Mandibular		Hyperplasia Infiltration Cellular	Lymphoid, Minimal Plasma Cell, Minimal
* Nose	Olfactory Epi Turbinat Lamina Propria Respirat Epith	Atrophy Atrophy Fibrosis Inflammation Metaplasia	Minimal Mild Mild Suppurative, Minimal Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 636

TRT#: 7

SEX: Male

DAY ON TEST: 266

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61508

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Inflammation	Mild
		Necrosis	Mild

PRIMARY CAUSE OF DEATH - Lung Pleura Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 637

TRT#: 7

SEX: Male

DAY ON TEST: 660

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61509

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Rectum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Testes	* Thymus
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Stomach, Glandular		

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
	Submucosa	Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Liver		Basophilic Focus	
* Lung	Mediastinum	Inflammation	Suppurative, Minimal
	Bronchus, Epithelium	Necrosis	Mild
	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 637

TRT#: 7

SEX: Male

DAY ON TEST: 660

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61509

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
* Thyroid Gland		Inflammation	Chronic Active, Mild
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Marked
	Carina, Submucosa	Inflammation	Chronic Active, Mild
	Carina, Submucosa	Mineralization	Minimal
		Necrosis	Marked

PRIMARY CAUSE OF DEATH - Trachea Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 638

TRT#: 7

SEX: Male

DAY ON TEST: 141

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61510

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
Skeletal Muscle		Inflammation	Mild
* Spleen		Necrosis	Minimal
* Thymus		Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 638

TRT#: 7

SEX: Male

DAY ON TEST: 141

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61510

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea

Epithelium

Regeneration

Mild

PRIMARY CAUSE OF DEATH

- Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 639

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61511

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Respirat Epith	Regeneration	Mild
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 3-12]		
* Lung		Alveolar/Bronchiolar Carcinoma	Multiple
	[Alveolar/Bronchiolar Carcinoma TGLs = 1,2-4]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 639

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61511

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Mucosa	Regeneration	Minimal
* Trachea		Hematopoietic Cell Proliferation	Mild
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 640

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61512

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Liver		Basophilic Focus	
		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	
	[Hepatocellular Adenoma TGLs = 2-12]		
	[Hepatocellular Carcinoma TGLs = 1-6]		
* Lung		Alveolar/Bronchiolar Adenoma	
	Bronchus, Epithelium	Regeneration	Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 640

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61512

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 641

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61513

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Esophagus
* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Brain		Inflammation	Chronic Active, Mild
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea, Epithelium	Hyperplasia	Mild
	Cornea	Inflammation	Acute, Marked
	Cornea	Neovascularization	Moderate
* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Heart		Polyarteritis	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 641

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61513

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Bronchus, Epithelium	Regeneration	Mild
	Turbinate	Atrophy	Mild
	Glands, Respirat Epith	Cyst	
	Lamina Propria	Fibrosis	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Olfactory Epi	Necrosis	Minimal
* Trachea	Mucosa	Regeneration	Mild
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
	Epithelium	Metaplasia	Squamous, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 642

TRT#: 7

SEX: Male

DAY ON TEST: 506

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61514

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Epididymis		Exfoliated Germ Cell	
* Heart		Cardiomyopathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Liver	Hepatocyte	Necrosis	Minimal
	[Necrosis TGLs = 2-5]		
* Lung	Bronchiole, Epithelium	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
	Mediastinum	Inflammation	Chronic Active, Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
		Infiltration Cellular	Plasma Cell, Mild
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 642

TRT#: 7

SEX: Male

DAY ON TEST: 506

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61514

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Moderate
[Hematopoietic Cell Proliferation	TGLs = 1-5]		
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 643

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61515

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Inflammation	Acute, Minimal
* Harderian Gland		Hyperplasia	Minimal
* Heart		Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 3-5]		
* Lung	Bronchiole, Epithelium	Hyperplasia	Moderate
		Inflammation	Suppurative, Marked
	Mediastinum	Inflammation	Chronic Active, Minimal
	[Inflammation TGLs = 1-4]		
Lymph Node	Deep Cervical	Hematopoietic Cell Proliferation	Moderate
	Deep Cervical	Hyperplasia	Lymphoid, Mild
	[Hematopoietic Cell Proliferation TGLs = 4-6]		
* Lymph Node, Bronchial		Infiltration Cellular	Plasma Cell, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 643

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61515

ORGAN AND ACCOUNTABLE SITE STATUS

[Infiltration Cellular TGLs = 2-4]

* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Minimal
		Infiltration Cellular	Plasma Cell, Minimal
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 644

TRT#: 7

SEX: Male

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61516

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Preputial Gland * Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Epididymis		Exfoliated Germ Cell	
* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
* Heart		Inflammation	Chronic Active, Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
* Lung	Bronchus, Epithelium	Regeneration	Marked
* Lymph Node, Mandibular		Ectasia	Moderate
		Infiltration Cellular	Plasma Cell, Mild
	[Ectasia TGLs = 1-6+8]		
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 644

TRT#: 7

SEX: Male

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61516

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Spleen	Lymph Follic	Atrophy	Mild
		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 645

TRT#: 7

SEX: Male

DAY ON TEST: 665

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61517

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Eye	* Harderian Gland
* Heart	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Epididymis	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Testes			

OBSERVATIONS

* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Mild
* Larynx	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Moderate
* Liver		Hematopoietic Cell Proliferation	Minimal
	[Hematopoietic Cell Proliferation		
* Nose	TGLs = 1-5]		
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 645

TRT#: 7

SEX: Male

DAY ON TEST: 665

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61517

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Thymus		Inflammation	Chronic Active, Mild
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 646

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61518

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Urinary Bladder			

MISSING

* Mammary Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Eye	Cornea	Inflammation	Acute, Minimal
* Heart		Inflammation	Chronic Active, Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Mandibular		Ectasia	Minimal
		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 646

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61518

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 647

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61519

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic	* Liver
* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Epididymis		Exfoliated Germ Cell	
* Eye	Lens	Cataract	Mild
[Cataract TGLs = 1-11]			
* Intestine Small, Jejunum		Hyperplasia	Lymphoid, Minimal
* Kidney		Metaplasia	Osseous, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Lung		Foreign Body	
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 647

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61519

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Testes	Seminif Tub	Degeneration	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 648

TRT#: 7

SEX: Male

DAY ON TEST: 650

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61520

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Esophagus	* Eye	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Urinary Bladder			

MISSING

* Mammary Gland

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Adrenal Cortex Note: TGLS 2-3=NCL		Inflammation	Suppurative, Minimal
* Bone		Fibro-Osseous Lesion	Minimal
* Epididymis		Exfoliated Germ Cell	
* Harderian Gland [Carcinoma TGLs = 3-11]		Carcinoma	
* Heart [Necrosis TGLs = 1-6]		Inflammation Necrosis	Acute, Marked Marked
* Kidney	Papilla	Inflammation Necrosis	Mild Mild
* Larynx	Respirat Epith	Hyperplasia Inflammation	Minimal Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
* Liver	Respirat Epith	Necrosis	Mild
* Lung	Hepatocyte	Necrosis	Moderate
		Alveolar/Bronchiolar Adenoma	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 648

TRT#: 7

SEX: Male

DAY ON TEST: 650

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61520

ORGAN AND ACCOUNTABLE SITE STATUS

	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Bronchial		Inflammation	Chronic Active, Mild
* Lymph Node, Mediastinal		Inflammation	Chronic Active, Marked
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Congestion	Mild
		Inflammation	Minimal
* Thymus		Inflammation	Chronic Active, Mild
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Heart Necrosis
 CONTRIBUTORY CAUSE OF DEATH - Heart Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 649

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61521

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	

MISSING

* Mammary Gland

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Epididymis		Granuloma Sperm	Marked
	[Granuloma Sperm TGLs = 1-8]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Regeneration	Mild
* Liver		Hepatocellular Adenoma	
		Mixed Cell Focus	
	[Hepatocellular Adenoma TGLs = 2-5]		
	[Mixed Cell Focus TGLs = 3-6]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 649

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61521

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Testes	Seminif Tub	Degeneration	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 650

TRT#: 7

SEX: Male

DAY ON TEST: 718

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61522

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic
* Kidney	* Liver	* Lung	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Gallbladder		Inflammation	Mild
* Intestine Small, Jejunum		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 9-15]		
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
Lymph Node	Pancreatic	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	Renal	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 5-6]		
[Lymphoma Malignant	TGLs = 6-14]		
[Lymphoma Malignant	TGLs = 7-13]		
* Lymph Node, Mandibular		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-8]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 3-3]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 650

TRT#: 7

SEX: Male

DAY ON TEST: 718

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61522

ORGAN AND ACCOUNTABLE SITE STATUS

* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 8-12]		
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Skin		Lymphoma Malignant	
* Spleen		Hematopoietic Cell Proliferation	Minimal
		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-5]		
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Lymph Node, Mesenteric Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 101

TRT#: 2

SEX: Female

DAY ON TEST: 684

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61423

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Thyroid Gland	* Trachea	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Brain		Inflammation	Acute, Minimal
* Harderian Gland		Hyperplasia	Mild
[Hyperplasia TGLs = 8-11]			
* Heart		Inflammation	Acute, Mild
* Kidney		Nephropathy	Moderate
[Nephropathy TGLs = 4-6]			
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver	Hepatocyte	Necrosis	Minimal
* Lung		Hemorrhage	Minimal
[Hemorrhage TGLs = 3-4]			
Lymph Node	Renal	Hyperplasia	Lymphoid, Mild
	Lumbar	Hyperplasia	Lymphoid, Minimal
[Hyperplasia TGLs = 5-12]			
[Hyperplasia TGLs = 7-13]			
* Mammary Gland		Inflammation	Chronic, Minimal
* Stomach, Glandular		Inflammation	Minimal
* Thymus		Atrophy	Minimal
		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 101

TRT#: 2

SEX: Female

DAY ON TEST: 684

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61423

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Inflammation

Mild

Artery

Necrosis

Marked

[Necrosis TGLs = 6-9]

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 102

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61424

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 103

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61425

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex	Subcapsular	Adenoma	
* Kidney		Nephropathy	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 104

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61426

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic | * Larynx | * Liver |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|---------------------------|---|--------------------------------|------------------|
| * Heart | | Cardiomyopathy | Minimal |
| * Kidney | | Nephropathy | Minimal |
| * Lung | | Alveolar/Bronchiolar Carcinoma | |
| | Alveolar Epith | Hyperplasia | Focal, Minimal |
| | [Alveolar/Bronchiolar Carcinoma TGLs = 1-4] | | |
| * Lymph Node, Bronchial | | Hyperplasia | Lymphoid, Marked |
| | [Hyperplasia TGLs = 2-4] | | |
| * Lymph Node, Mediastinal | | Hyperplasia | Lymphoid, Marked |
| * Ovary | | Cyst | |
| * Stomach, Glandular | | Inflammation | Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Mild |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 105

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61427

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Mild
		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 106

TRT#: 2

SEX: Female

DAY ON TEST: 690

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61428

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Eye		Carcinoma	Metastatic (Harderian Gland)
* Harderian Gland		Carcinoma	
[Carcinoma TGLs = 2-11]			
* Lung		Carcinoma	Metastatic (Harderian Gland)
[Carcinoma TGLs = 3,4-4]			
Lymph Node	Lumbar	Hyperplasia	Mild
[Hyperplasia TGLs = 6-6]			
* Lymph Node, Mandibular		Carcinoma	Metastatic (Harderian Gland)
[Carcinoma TGLs = 1-12]			
Mesentery	Fat	Necrosis	Mild
[Necrosis TGLs = 5-13]			
* Nose		Carcinoma	Metastatic (Harderian Gland)
* Spleen		Hyperplasia	Lymphoid, Mild
[Hyperplasia TGLs = 7-5]			
* Thymus		Hyperplasia	Lymphoid, Minimal
* Thyroid Gland	Follicular Cel	Adenoma	

PRIMARY CAUSE OF DEATH - Harderian Gland Carcinoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 107

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61429

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Mammary Gland	Mesentery
* Nose	* Ovary	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Gallbladder

OBSERVATIONS

Lymph Node	Renal Lumbar	Amyloid Deposition Lymphoma Malignant	Mild
[Amyloid Deposition TGLs = 3-12]			
[Lymphoma Malignant TGLs = 2-13]			
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Amyloid Deposition Lymphoma Malignant	Mild
[Lymphoma Malignant TGLs = 1-8]			
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 108

TRT#: 2

SEX: Female

DAY ON TEST: 587

DOSE: Control

DISP: Natural Death

HISTO: 61430

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Rectum	* Islets, Pancreatic
* Kidney	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx	

OBSERVATIONS

* Heart	Inflammation	Acute, Minimal
* Liver	Eosinophilic Focus	
[Eosinophilic Focus TGLs = 1-6]		
* Lymph Node, Mediastinal	Inflammation	Acute, Mild
* Ovary	Cyst	
	Inflammation	Marked
[Cyst TGLs = 3-8]		
[Inflammation TGLs = 2-8]		
* Thymus	Atrophy	Mild
* Uterus	Inflammation	Moderate

PRIMARY CAUSE OF DEATH

- Ovary Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 109

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61431

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Accessory Adrenal Cortical Nodule	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 2,4-5+6]		
* Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node	Lumbar	Ectasia	Mild
	[Ectasia TGLs = 3-12]		
* Nose		Inflammation	Suppurative, Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 110

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61432

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

INSUFFICIENT TISSUE

* Ovary

OBSERVATIONS

* Harderian Gland		Adenoma	
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 111

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61433

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Bone		Fibro-Osseous Lesion	Minimal
* Heart		Polyarteritis	Moderate
* Larynx		Inflammation	Chronic Active, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
[Cyst TGLs = 1-8]			
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 112

TRT#: 2

SEX: Female

DAY ON TEST: 687

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61434

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Gallbladder
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Pituitary Gland	* Skin
* Trachea			

MISSING

* Parathyroid Gland

OBSERVATIONS

* Brain		Lymphoma Malignant
* Eye		Lymphoma Malignant
* Harderian Gland		Lymphoma Malignant
* Heart		Lymphoma Malignant
	[Lymphoma Malignant TGLs = 4-12]	
* Intestine Large, Cecum		Lymphoma Malignant
* Kidney		Lymphoma Malignant
	[Lymphoma Malignant TGLs = 11-6]	
* Larynx		Lymphoma Malignant
* Liver		Lymphoma Malignant
	[Lymphoma Malignant TGLs = 10-13]	
* Lung		Lymphoma Malignant
Lymph Node	Iliac	Lymphoma Malignant
	Renal	Lymphoma Malignant
	Axillary	Lymphoma Malignant
		Lymphoma Malignant
Note: TGL 7 -c- lymph node, brachial		
	[Lymphoma Malignant TGLs = 13-13]	
	[Lymphoma Malignant TGLs = 12-6]	
	[Lymphoma Malignant TGLs = 2-12]	
	[Lymphoma Malignant TGLs = 7-14]	
* Lymph Node, Bronchial		Lymphoma Malignant

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 112

TRT#: 2

SEX: Female

DAY ON TEST: 687

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61434

ORGAN AND ACCOUNTABLE SITE STATUS

[Lymphoma Malignant	TGLs = 6-4]		
* Lymph Node, Mandibular		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-8]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 5-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Mammary Gland		Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
* Ovary		Inflammation	Marked
		Lymphoma Malignant	
[Inflammation	TGLs = 8-8]		
* Pancreas		Lymphoma Malignant	
* Salivary Glands		Lymphoma Malignant	
Skeletal Muscle		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 9-5]		
* Stomach, Forestomach		Lymphoma Malignant	
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Thyroid Gland		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	
* Uterus		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Lymph Node, Mediastinal Lymphoma Malignant

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 113

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61435

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	Tooth	* Trachea	* Urinary Bladder

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Mixed Cell Focus	
* Nose	Lateral Wall	Inflammation	Chronic Active, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 114

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61436

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Heart |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic | * Kidney |
| * Liver | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Salivary Glands | * Skin | * Spleen |
| * Thymus | * Thyroid Gland | * Urinary Bladder | |

MISSING

- * Lymph Node, Bronchial

OBSERVATIONS

- | | | | |
|----------------------------|----------------|----------------|-------------------------|
| * Larynx | Respirat Epith | Metaplasia | Squamous, Minimal |
| * Ovary | | Cyst | |
| [Cyst TGLs = 1-8] | | | |
| * Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| * Stomach, Forestomach | | Mineralization | Minimal |
| * Stomach, Glandular | | Mineralization | Minimal |
| * Trachea | | Inflammation | Chronic Active, Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Marked |
| [Hyperplasia TGLs = 2-9] | | | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 115

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61437

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Skin
* Stomach, Forestomach	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Intestine Large, Cecum		Inflammation	Mild
	[Inflammation TGLs = 2-7]		
* Lung		Alveolar/Bronchiolar Adenoma	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-7]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Salivary Glands		Lymphoma Malignant	
* Spleen		Inflammation	Minimal
		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-5]		
* Stomach, Glandular		Inflammation	Mild
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 116

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61438

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Heart |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic | * Larynx |
| * Lung | * Lymph Node, Bronchial | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Stomach, Forestomach | * Stomach, Glandular | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Lymph Node, Mandibular

OBSERVATIONS

- | | | | |
|----------|---|--------------------------|-------------------|
| * Kidney | | Nephropathy | Minimal |
| * Liver | | Basophilic Focus | |
| | | Hepatocellular Carcinoma | Multiple |
| | [Hepatocellular Carcinoma TGLs = 1,2-5+6] | | |
| * Spleen | | Hyperplasia | Lymphoid, Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Moderate |

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 117

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61439

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Ovary		Cyst	
[Cyst TGLs = 1-8]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 118

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61440

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fasciata	Hypertrophy	Focal, Minimal
* Liver		Clear Cell Focus	
[Clear Cell Focus TGLs = 1-6]			
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 119

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61441

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea		

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Gallbladder		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-5]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Urinary Bladder		Hyperplasia	Lymphoid, Moderate
		Lymphoma Malignant	
* Uterus		Inflammation	Moderate
	[Inflammation TGLs = 2-9]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 120

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61442

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Skin	* Stomach, Forestomach	* Trachea

MISSING

* Lymph Node, Mandibular	* Salivary Glands
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OBSERVATIONS

* Harderian Gland	Lymphoma Malignant
* Heart	Lymphoma Malignant
* Larynx	Lymphoma Malignant
* Liver	Lymphoma Malignant
* Lung	Lymphoma Malignant
* Lymph Node, Bronchial	Lymphoma Malignant
* Lymph Node, Mediastinal	Lymphoma Malignant
[Lymphoma Malignant TGLs = 1-3]	
Skeletal Muscle	Lymphoma Malignant
[Sarcoma TGLs = 3-12]	Sarcoma
* Spleen	Lymphoma Malignant
[Lymphoma Malignant TGLs = 2-5]	
* Stomach, Glandular	Lymphoma Malignant
* Thymus	Lymphoma Malignant
* Thyroid Gland	Lymphoma Malignant
* Urinary Bladder	Lymphoma Malignant
* Uterus	Endometrium
	Hyperplasia
	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 121

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61443

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder	* Lymph Node, Bronchial
---------------	-------------------------

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Kidney		Nephropathy	Minimal
* Liver		Mixed Cell Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
* Uterus		Hemorrhage	Mild
	Endometrium	Hyperplasia	Cystic, Moderate
		Inflammation	Mild

[Hyperplasia TGLs = 1-9]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 122

TRT#: 2

SEX: Female

DAY ON TEST: 663

DOSE: Control

DISP: Natural Death

HISTO: 61444

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Kidney
* Lung	* Lymph Node, Mandibular	* Mammary Gland	* Nose
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Islets, Pancreatic

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia Inflammation	Mild Chronic Active, Minimal
* Liver	Hepatocyte [Granulosa-Theca Tumor Malignant TGLs = 4-12] [Necrosis TGLs = 1,2,3,5,6-5+6+13+15]	Granulosa-Theca Tumor Malignant Necrosis	Metastatic (Ovary) Mild
* Lymph Node, Bronchial		Ectasia	Minimal
* Lymph Node, Mesenteric		Granulosa-Theca Tumor Malignant	Metastatic (Ovary)
* Ovary		Granulosa-Theca Tumor Malignant	
			[Granulosa-Theca Tumor Malignant TGLs = 9-14]
* Pancreas		Granulosa-Theca Tumor Malignant	Metastatic (Ovary)
* Pituitary Gland	Pars Distalis Pars Distalis	Angiectasis Hyperplasia	Mild Mild
			[Angiectasis TGLs = 8-9]
Skeletal Muscle		Granulosa-Theca Tumor Malignant	Metastatic (Ovary)

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 122

TRT#: 2

SEX: Female

DAY ON TEST: 663

DOSE: Control

DISP: Natural Death

HISTO: 61444

ORGAN AND ACCOUNTABLE SITE STATUS

[Granulosa-Theca Tumor Malignant TGLs = 7-15]

* Stomach, Forestomach

Epithelium

Granulosa-Theca Tumor Malignant

Metastatic (Ovary)

Hyperplasia

Mild

* Stomach, Glandular

Granulosa-Theca Tumor Malignant

Metastatic (Ovary)

* Thymus

Atrophy

Mild

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

PRIMARY CAUSE OF DEATH

- Ovary Granulosa-Theca Tumor Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 123

TRT#: 2

SEX: Female

DAY ON TEST: 653

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61445

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Parathyroid Gland
Peripheral Nerve	* Pituitary Gland	* Salivary Glands	* Skin
Spinal Cord	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Minimal
* Intestine Small, Duodenum		Inflammation	Marked
		Necrosis	Marked
	[Inflammation TGLs = 4-7]		
	[Necrosis TGLs = 4-7]		
* Kidney		Nephropathy	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-12]		
Lymph Node	Renal	Necrosis	Mild
	[Necrosis TGLs = 3-6]		
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 1-12]		
* Nose		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Pancreas		Inflammation	Chronic Active, Mild
Skeletal Muscle		Degeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 123

TRT#: 2

SEX: Female

DAY ON TEST: 653

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61445

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Hyperplasia	Lymphoid, Mild
* Stomach, Forestomach	Epithelium	Hyperplasia Inflammation	Mild Mild
	[Hyperplasia TGLs = 5-13]		
	[Inflammation TGLs = 5-13]		
* Stomach, Glandular		Inflammation Necrosis	Mild Minimal
* Thymus		Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Intestine Small, Duodenum Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 124

TRT#: 2

SEX: Female

DAY ON TEST: 709

DOSE: Control

DISP: Natural Death

HISTO: 61446

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Ileum	* Islets, Pancreatic	* Larynx	* Mammary Gland
* Nose	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Stomach, Glandular
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OBSERVATIONS

* Adrenal Cortex		Necrosis	Minimal
* Heart		Lymphoma Malignant	
* Kidney		Nephropathy	Minimal
* Liver		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 7,8,9,10,11,12-12+13+14+15+16]		
* Lung		Lymphoma Malignant	
Lymph Node	Renal	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
	Iliac	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 13-6]		
[Lymphoma Malignant	TGLs = 15-12]		
[Lymphoma Malignant	TGLs = 14-14]		
* Lymph Node, Bronchial		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 4-4]		
* Lymph Node, Mandibular		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-8]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 2-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 6-7]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 124

TRT#: 2

SEX: Female

DAY ON TEST: 709

DOSE: Control

DISP: Natural Death

HISTO: 61446

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Lymphoma Malignant	
* Pancreas	Lymphoma Malignant	
* Spleen	Hematopoietic Cell Proliferation	Mild
	Lymphoma Malignant	
[Lymphoma Malignant TGLs = 5-5]		
* Stomach, Forestomach	Inflammation	Minimal
[Inflammation TGLs = 16-9]		
* Thymus	Lymphoma Malignant	
[Lymphoma Malignant TGLs = 3-3]		

PRIMARY CAUSE OF DEATH - Liver Lymphoma Malignant

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 125

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61447

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Heart	Valve	Thrombosis	Mild
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

[Hyperplasia TGLs = 1-12]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 126

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61448

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Liver		Eosinophilic Focus	
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Pituitary Gland	Pars Distalis	Angiectasis	Minimal
	Pars Distalis	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 127

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61449

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Kidney		Cyst	
* Liver		Cyst	
		Hepatocellular Carcinoma	
	[Cyst TGLs = 4-6]		
	[Hepatocellular Carcinoma TGLs = 3-5]		
* Lung	Alveolar Epith	Hyperplasia	Focal, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1,2-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 128

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61450

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Bone		Fibro-Osseous Lesion	Minimal
* Kidney		Lymphoma Malignant	
* Liver		Angiectasis	Mild
		Lymphoma Malignant	
	[Angiectasis TGLs = 3-6]		
	[Lymphoma Malignant TGLs = 2,4,5-5+12+13]		
Lymph Node	Renal	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 6-15]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 7-14]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Lymphoma Malignant	
* Stomach, Glandular		Cyst	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 129

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61451

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 130

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61452

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-5+6]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Inflammation	Chronic, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 131

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61453

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Parathyroid Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Harderian Gland		Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Uterus		Angiectasis	Moderate
	Endometrium	Hyperplasia	Cystic, Moderate
		Thrombosis	Moderate

[Thrombosis TGLs = 1-9]

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 132

TRT#: 2

SEX: Female

DAY ON TEST: 647

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61454

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Thymus
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OBSERVATIONS

* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Pituitary Gland	Pars Intermed	Carcinoma	
[Carcinoma TGLs = 1-9]			
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Intermed Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 133

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61455

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Mild
	Cornea	Inflammation	Acute, Minimal
	[Hyperplasia TGLs = 1-11]		
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 2-11]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 134

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61456

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone Marrow |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Gallbladder | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic | * Larynx | * Lung |
| * Lymph Node, Bronchial | * Lymph Node, Mandibular | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Salivary Glands | * Skin | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |

MISSING

- | | |
|---------------------|-------------------|
| * Parathyroid Gland | * Pituitary Gland |
|---------------------|-------------------|

OBSERVATIONS

- | | | | |
|----------|--|----------------------------------|------------------|
| * Bone | | Fibro-Osseous Lesion | Minimal |
| * Kidney | | Metaplasia | Osseous, Minimal |
| | | Nephropathy | Minimal |
| * Liver | [Hepatocellular Carcinoma TGLs = 1-12] | Hepatocellular Carcinoma | |
| * Spleen | | Hematopoietic Cell Proliferation | Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Minimal |

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 135

TRT#: 2

SEX: Female

DAY ON TEST: 590

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61457

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hepatoblastoma	
	Hepatocyte	Necrosis	Mild
	[Hepatoblastoma TGLs = 6-13]		
	[Necrosis TGLs = 5-5]		
* Lung		Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 1-12]		
Lymph Node	Iliac	Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 2-12]		
* Lymph Node, Mediastinal		Hepatoblastoma	Metastatic (Liver)
Mesentery		Hepatoblastoma	Metastatic (Liver)
	[Hepatoblastoma TGLs = 7-6]		
* Ovary	Periovarn Tiss	Hepatoblastoma	Metastatic (Liver)
* Pancreas		Cyst	
	[Cyst TGLs = 3-5]		
* Spleen		Hematopoietic Cell Proliferation	Mild
	[Hematopoietic Cell Proliferation TGLs = 4-5]		
* Thymus		Hepatoblastoma	Metastatic (Liver)

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 135

TRT#: 2

SEX: Female

DAY ON TEST: 590

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61457

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Moderate

PRIMARY CAUSE OF DEATH

- Liver Hepatoblastoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 136

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61458

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Clitoral Gland | * Esophagus | * Eye |
| * Gallbladder | * Harderian Gland | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic | * Kidney | * Larynx | * Liver |
| * Lymph Node, Bronchial | * Lymph Node, Mandibular | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Thyroid Gland | * Trachea |
| * Urinary Bladder | | | |

MISSING

- | | |
|---------------------------|---------------------|
| * Lymph Node, Mediastinal | * Parathyroid Gland |
|---------------------------|---------------------|

INSUFFICIENT TISSUE

- * Thymus

OBSERVATIONS

- | | | | |
|--------------------------|---|------------------------------|---------------------|
| * Brain | | Infiltration Cellular | Lymphocyte, Minimal |
| * Heart | | Cardiomyopathy | Minimal |
| * Lung | | Alveolar/Bronchiolar Adenoma | |
| | [Alveolar/Bronchiolar Adenoma TGLs = 1-4] | | |
| * Lymph Node, Mesenteric | | Hyperplasia | Lymphoid, Mild |
| * Pituitary Gland | Pars Distalis | Adenoma | |
| | [Adenoma TGLs = 2-9] | | |
| * Stomach, Glandular | | Inflammation | Mild |
| | | Mineralization | Mild |
| * Uterus | Endometrium | Hyperplasia | Cystic, Mild |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 137

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61459

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Parathyroid Gland

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 138

TRT#: 2

SEX: Female

DAY ON TEST: 669

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61460

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Intestine Large, Cecum		Inflammation	Granulomatous, Marked
* Lung	Alveolar Epith	Hyperplasia	Focal, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Mild
* Mammary Gland		Adenoma	
[Adenoma TGLs = 1-12]			
* Nose		Inflammation	Suppurative, Minimal
* Skin		Erosion	Minimal
	Epidermis	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
[Hematopoietic Cell Proliferation TGLs = 2-5]			
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH

- Mammary Gland Adenoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 139

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61461

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Parathyroid Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	
	Bronchiole, Epithelium	Hyperplasia	Mild
	[Alveolar/Bronchiolar Carcinoma TGLs = 2-4]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 140

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61462

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-6]		
* Lung		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Stomach, Glandular		Infiltration Cellular	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 141

TRT#: 2

SEX: Female

DAY ON TEST: 499

DOSE: Control

DISP: Natural Death

HISTO: 61463

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|----------------------|-------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Islets, Pancreatic | * Kidney | * Lymph Node, Mandibular |
| * Lymph Node, Mediastinal | * Mammary Gland | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Stomach, Forestomach | * Stomach, Glandular | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Lymph Node, Bronchial

AUTO PRECLUDES DIAG.

- | | | | |
|----------------------------|--------------------------|--------------------------|--------------------------|
| * Gallbladder | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | | | |

OBSERVATIONS

- | | | | |
|--------------------------|------------------------------------|----------------------------------|--------------|
| * Larynx | Squam Epithel | Hyperplasia | Minimal |
| * Liver | | Histiocytic Sarcoma | |
| | [Histiocytic Sarcoma TGLs = 1-5] | | |
| * Lung | | Histiocytic Sarcoma | |
| * Lymph Node, Mesenteric | | Histiocytic Sarcoma | |
| * Nose | Respirat Epith | Accumulation, Hyaline Droplet | Mild |
| * Spleen | | Hematopoietic Cell Proliferation | Moderate |
| * Uterus | Endometrium | Histiocytic Sarcoma | |
| | | Hyperplasia | Cystic, Mild |
| | [Histiocytic Sarcoma TGLs = 2-9] | | |

PRIMARY CAUSE OF DEATH - Liver Histiocytic Sarcoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 142

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61464

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

Lymph Node [Hyperplasia TGLs = 3-6]	Renal	Hyperplasia	Lymphoid, Moderate
* Nose * Ovary [Cyst TGLs = 1,2-8]	Respirat Epith	Accumulation, Hyaline Droplet Cyst	Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 143

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61465

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Heart		Cardiomyopathy	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin		Basal Cell Carcinoma	
	[Basal Cell Carcinoma TGLs = 3-12]		
* Spleen		Hematopoietic Cell Proliferation	Mild
	[Hematopoietic Cell Proliferation TGLs = 1-5]		
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 144

TRT#: 2

SEX: Female

DAY ON TEST: 177

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61466

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

Peripheral Nerve		Degeneration	Minimal
Skeletal Muscle		Degeneration	Minimal
[Degeneration TGLs = 1-12+13]			
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Peripheral Nerve Degeneration

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 145

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61467

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone Marrow	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mandibular	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Clitoral Gland	* Mammary Gland
------------------	-----------------

OBSERVATIONS

Blood Vessel	Inflammation	Mild
Note: nose, various sites		
* Bone	Fibro-Osseous Lesion	Minimal
* Brain	Lymphoma Malignant	
* Heart	Necrosis	Minimal
* Liver	Eosinophilic Focus	
	Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 1-6]		
* Lymph Node, Bronchial	Lymphoma Malignant	
* Lymph Node, Mediastinal	Lymphoma Malignant	
* Lymph Node, Mesenteric	Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet
	Olfactory Epi	Accumulation, Hyaline Droplet
* Pituitary Gland	Pars Distalis	Hyperplasia
* Spleen		Lymphoma Malignant
* Stomach, Forestomach		Inflammation
* Thymus		Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 146

TRT#: 2

SEX: Female

DAY ON TEST: 593

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61468

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Mammary Gland	* Nose	* Pancreas
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder	* Parathyroid Gland
---------------	---------------------

INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Intestine Large, Cecum		Inflammation	Minimal
* Intestine Small, Ileum		Inflammation	Marked
		Necrosis	Marked
		Ulcer	Marked
	[Inflammation TGLs = 2-12]		
	[Necrosis TGLs = 2-12]		
	[Ulcer TGLs = 2-12]		
* Lymph Node, Mesenteric		Infiltration Cellular	Plasma Cell, Marked
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Marked
	[Hematopoietic Cell Proliferation TGLs = 1-5]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

PRIMARY CAUSE OF DEATH - Intestine Small, Ileum Ulcer
 CONTRIBUTORY CAUSE OF DEATH - Intestine Small, Ileum Inflammation

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 146

TRT#: 2

SEX: Female

DAY ON TEST: 593

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61468

ORGAN AND ACCOUNTABLE SITE STATUS

- Intestine Small, Ileum Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 147

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61469

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea			

INSUFFICIENT TISSUE

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
[Vacuolization Cytoplasmic TGLs = 4-3]			
* Heart		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
* Lung		Lymphoma Malignant	
	Bronchus, Epithelium	Necrosis	Minimal
	Bronchus, Epithelium	Regeneration	Minimal
Lymph Node	Renal	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
[Lymphoma Malignant TGLs = 1-6]			
[Lymphoma Malignant TGLs = 2-12]			
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
Mesentery	Fat	Necrosis	Minimal
[Necrosis TGLs = 3-13]			
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 147

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61469

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 148

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61470

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 3-6]		
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 2-12]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Pituitary Gland	Pars Distalis	Angiectasis	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Stomach, Glandular		Mineralization	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 149

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 61471

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Clitoral Gland	* Parathyroid Gland
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OBSERVATIONS

* Brain	Infiltration Cellular	Lymphocyte, Minimal
* Harderian Gland	Adenoma	
* Kidney	Carcinoma	
	Hyperplasia	Lymphoid, Mild
[Carcinoma TGLs = 2-6]		
* Liver	Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 1-6]		
* Lymph Node, Bronchial	Hyperplasia	Lymphoid, Minimal
* Thymus	Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 150

TRT#: 2

SEX: Female

DAY ON TEST: 663

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61472

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	Skeletal Muscle
* Skin	* Spleen	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Clitoral Gland	* Lymph Node, Mandibular
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Lung	Alveolus	Alveolar/Bronchiolar Carcinoma	Multiple
	Bronchus, Epithelium	Infiltration Cellular	Histiocyte, Moderate
	Bronchus, Epithelium	Inflammation	Chronic Active, Mild
	[Alveolar/Bronchiolar Carcinoma TGLs = 2,3-4]	Necrosis	Minimal
		Regeneration	Minimal
* Mammary Gland		Hyperplasia	Mild
	[Hyperplasia TGLs = 1-12]		
* Ovary		Cyst	
	[Cyst TGLs = 5-8]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[Adenoma TGLs = 7-9]		
Skel Muscle			
	Note: TGLS 6=NCL		
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
	[Hyperplasia TGLs = 8-12]		
* Thymus		Hyperplasia	Lymphoid, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 150

TRT#: 2

SEX: Female

DAY ON TEST: 663

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 61472

ORGAN AND ACCOUNTABLE SITE STATUS

[Hyperplasia TGLs = 4-3]

Inflammation

Chronic, Mild

PRIMARY CAUSE OF DEATH - Lung Alveolar/Bronchiolar Carcinoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 301

TRT#: 4

SEX: Female

DAY ON TEST: 644

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61723

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Pancreas	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Parathyroid Gland

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Heart		Histiocytic Sarcoma	
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 2,3-5]		
* Lung		Histiocytic Sarcoma	
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
* Mammary Gland		Histiocytic Sarcoma	Metastatic (Uterus)
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 5-8]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	[Hyperplasia TGLs = 1-9]		
* Spleen		Hematopoietic Cell Proliferation	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 301

TRT#: 4

SEX: Female

DAY ON TEST: 644

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61723

ORGAN AND ACCOUNTABLE SITE STATUS

[Hematopoietic Cell Proliferation	TGLs = 4-5]		
* Uterus	Endometrium	Histiocytic Sarcoma Hyperplasia	Cystic, Moderate
[Histiocytic Sarcoma	TGLs = 6-6]		

PRIMARY CAUSE OF DEATH - Uterus Histiocytic Sarcoma

CONTRIBUTORY CAUSE OF DEATH - Liver Histiocytic Sarcoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 302

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61724

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 3,4-5+12]		
* Lung		Histiocytic Sarcoma	
Lymph Node	Pancreatic	Histiocytic Sarcoma	
	Renal	Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 5-12]		
* Lymph Node, Bronchial		Histiocytic Sarcoma	
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	
	[Cystadenoma TGLs = 6-8]	Cystadenoma	
* Spleen		Hematopoietic Cell Proliferation	Moderate
	[Hematopoietic Cell Proliferation TGLs = 2-5]		
* Thymus		Histiocytic Sarcoma	
	[Histiocytic Sarcoma TGLs = 1-3]		
* Urinary Bladder		Histiocytic Sarcoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 303

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61725

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 3-6]		
Mesentery	Fat	Necrosis	Mild
	[Necrosis TGLs = 1-12]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
* Uterus		Angiectasis	Mild
	Endometrium	Hyperplasia	Cystic, Mild
	[Angiectasis TGLs = 2-12]		

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 304

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61726

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Heart |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic | * Kidney |
| * Larynx | * Lung | * Lymph Node, Bronchial | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric | * Mammary Gland | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Stomach, Forestomach | * Stomach, Glandular | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

OBSERVATIONS

- | | | | |
|--------------------------|-----------------------------------|--------------------|-------------------|
| * Liver | | Eosinophilic Focus | |
| | [Eosinophilic Focus TGLs = 1-5] | | |
| * Lymph Node, Mandibular | | Hyperplasia | Lymphoid, Minimal |
| * Nose | Olfactory Epi | Atrophy | Minimal |
| * Spleen | | Hyperplasia | Lymphoid, Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Mild |

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 305

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61727

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia	Minimal
Lymph Node	Renal	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-6]		
	[Lymphoma Malignant TGLs = 4-12]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 5-7]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-5]		
* Thymus		Cyst	
		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Inflammation	Mild
	[Inflammation TGLs = 2-9]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 306

TRT#: 4

SEX: Female

DAY ON TEST: 697

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61728

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lung	[Alveolar/Bronchiolar Carcinoma	Alveolar/Bronchiolar Carcinoma	
* Nose	TGLs = 1-4] Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Skin	Subcut Tiss	Fibrosarcoma	
	[Fibrosarcoma TGLs = 2-12]		
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH

- Skin Subcut Tiss Fibrosarcoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 307

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61729

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 1-12]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Thymus		Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 308

TRT#: 4

SEX: Female

DAY ON TEST: 635

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61730

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hyperplasia	Focal, Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
* Intestine Large, Cecum		Necrosis	Minimal
* Intestine Small, Ileum		Necrosis	Minimal
* Kidney	Capsule	Inflammation	Mild
		Necrosis	Minimal
		Nephropathy	Minimal
	[Nephropathy TGLs = 2-6]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Submucosa	Mineralization	Minimal
* Liver	Hepatocyte	Degeneration	Moderate
	Hepatocyte	Necrosis	Moderate
	[Necrosis TGLs = 1-5]		
* Lung		Inflammation	Suppurative, Minimal
	Mediastinum	Inflammation	Suppurative, Minimal
* Lymph Node, Bronchial		Necrosis	Lymphoid, Minimal
* Lymph Node, Mediastinal		Necrosis	Lymphoid, Minimal
Mesentery	Fat	Necrosis	Mild
	[Necrosis TGLs = 4-6]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinates	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 308

TRT#: 4

SEX: Female

DAY ON TEST: 635

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61730

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary		Cyst	
		Inflammation	Minimal
	[Cyst TGLs = 3-8]		
* Pancreas		Inflammation	Chronic Active, Moderate
		Necrosis	Moderate
* Spleen		Inflammation	Mild
		Necrosis	Moderate
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
		Inflammation	Minimal
* Stomach, Glandular		Degeneration	Minimal
* Thymus		Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Inflammation	Mild

PRIMARY CAUSE OF DEATH - Liver Hepatocyte Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 309

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61731

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Larynx		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-5]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus		Angiectasis	Moderate
	Endometrium	Hyperplasia	Cystic, Mild
	[Angiectasis TGLs = 2-9]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 310

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61732

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Kidney		Hyperplasia	Lymphoid, Mild
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 3-5]		
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
* Ovary		Luteoma	
	[Luteoma TGLs = 1-8]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Marked
	[Hyperplasia TGLs = 2-9]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 311

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61733

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Liver		Clear Cell Focus	
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Ovary		Cyst	
* Pituitary Gland	Pars Distalis	Adenoma	
	[Adenoma TGLs = 1-9]		
* Spleen		Hyperplasia	Lymphoid, Mild
* Thymus		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 312

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61734

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cystadenoma	
* Spleen		Hyperplasia	Lymphoid, Minimal
* Stomach, Forestomach		Squamous Cell Papilloma	
	[Squamous Cell Papilloma TGLs = 1-9]		
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 313

TRT#: 4

SEX: Female

DAY ON TEST: 690

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61735

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Pituitary Gland	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

Lymph Node [Hyperplasia TGLs = 3-14]	Renal	Hyperplasia	Lymphoid, Mild
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Ovary [Teratoma Benign TGLs = 2-12]		Teratoma Benign	
* Skin		Inflammation	Chronic Active, Minimal
		Melanoma Malignant	
		Neural Crest Tumor	
* Spleen [Neural Crest Tumor TGLs = 1-13]		Hematopoietic Cell Proliferation	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

PRIMARY CAUSE OF DEATH - Ovary Teratoma Benign

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 314

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61736

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Parathyroid Gland

INSUFFICIENT TISSUE

* Pituitary Gland

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Eosinophilic Focus	
	[Basophilic Focus TGLs = 2-6]		
Mesentery	Fat	Necrosis	Mild
	[Necrosis TGLs = 1-12]		
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Respirat Epith	Necrosis	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 315

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61737

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Liver		Clear Cell Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 316

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61738

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Heart		Inflammation	Chronic Active, Minimal
* Intestine Small, Ileum		Hyperplasia	Lymphoid, Minimal
* Kidney		Hyperplasia	Lymphoid, Minimal
		Infarct	Minimal
* Liver		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Hyperplasia	Tubular, Minimal
	[Hyperplasia TGLs = 1-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 317

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61739

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Islets, Pancreatic	* Kidney	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Intestine Small, Ileum		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 8,9-6+14]		
* Intestine Small, Jejunum		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 7-13]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	
[Hepatocellular Adenoma	TGLs = 1-12]		
* Lung		Lymphoma Malignant	
Lymph Node	Lumbar	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 5-12]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 6-7]		
Mesentery	Fat	Necrosis	Minimal
[Necrosis	TGLs = 3-13]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 317

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61739

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Hematopoietic Cell Proliferation	Minimal
		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Thymus		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 4-9]		

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 318

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61740

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Clitoral Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Lung		Lymphoma Malignant	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	
[Cyst TGLs = 1-8]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Polyp Stromal	
[Polyp Stromal TGLs = 2-9]			

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 319

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61741

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Harderian Gland		Hyperplasia	Minimal
* Kidney		Infarct	Minimal
* Liver		Clear Cell Focus	
		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-5]		
* Lung		Alveolar/Bronchiolar Adenoma	
	[Alveolar/Bronchiolar Adenoma TGLs = 2-4]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 320

TRT#: 4

SEX: Female

DAY ON TEST: 625

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61742

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Harderian Gland		Hyperplasia	Minimal
* Kidney		Metaplasia	Osseous, Minimal
		Nephropathy	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Mesentery	Fat	Necrosis	Minimal
[Necrosis TGLs = 2-6]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[Adenoma TGLs = 1-9]			
* Thymus		Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 321

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61743

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Mandibular
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Gallbladder	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 7-13]		
* Liver		Basophilic Focus	
[Lymphoma Malignant	TGLs = 3-5]	Lymphoma Malignant	
Lymph Node	Renal	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 6-6]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 8-12]		
* Nose	Olfactory Epi	Atrophy	Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
* Pituitary Gland	Pars Distalis	Angiectasis	Minimal
[Angiectasis	TGLs = 2-9]		
* Spleen		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 4,5-5]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 321

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61743

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 322

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61744

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Mammary Gland	* Pancreas	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Bone Marrow		Hemangiosarcoma	Metastatic (Spleen)
* Harderian Gland		Hyperplasia	Minimal
* Kidney		Infarct	Minimal
* Lung		Alveolar/Bronchiolar Adenoma	
[Alveolar/Bronchiolar Adenoma	TGLs = 3-4]		
Lymph Node	Lumbar	Ectasia	Mild
[Ectasia TGLs = 4-12]			
* Lymph Node, Mesenteric		Ectasia	Mild
[Ectasia TGLs = 6-7]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	
* Pituitary Gland	Pars Distalis	Adenoma	
[Adenoma TGLs = 5-9]			

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 322

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61744

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen

Hemangiosarcoma

Hematopoietic Cell Proliferation

Mild

[Hemangiosarcoma TGLs = 2-12]

[Hematopoietic Cell Proliferation TGLs = 1-5]

* Thyroid Gland

Follicular Cel

Hyperplasia

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 323

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61745

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Heart		Inflammation	Chronic Active, Minimal
* Kidney		Nephropathy	Mild
* Liver		Hepatocellular Carcinoma	
		Hyperplasia	Lymphoid, Minimal
[Hepatocellular Carcinoma TGLs = 3-12]			
Lymph Node	Iliac	Ectasia	Mild
[Ectasia TGLs = 4,5-6+13]			
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
		Hyperplasia	Lymphoid, Mild
* Thymus		Hyperplasia	Lymphoid, Mild
* Uterus		Thrombosis	Mild
[Thrombosis TGLs = 2-13]			

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 324

TRT#: 4

SEX: Female

DAY ON TEST: 561

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61746

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	Peripheral Nerve	* Salivary Glands
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Parathyroid Gland
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OBSERVATIONS

* Heart		Mineralization	Minimal
* Kidney		Nephropathy	Mild
* Liver		Fibrosis	Focal, Mild
[Fibrosis TGLs = 3-5]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[Adenoma TGLs = 1-9]			
Skeletal Muscle		Inflammation	Moderate
[Inflammation TGLs = 2-12]			
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 325

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61747

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Liver		Hepatocellular Adenoma	Multiple
	[Hepatocellular Adenoma TGLs = 1,2-6+12]		
* Lung		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 3-13]		
* Nose	Respirat Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Polyp Stromal	

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 326

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61748

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

OBSERVATIONS

* Brain		Infiltration Cellular	Minimal
* Kidney		Hyperplasia	Lymphoid, Mild
* Liver		Hepatocellular Adenoma	
	Hepatocyte	Hepatocellular Carcinoma	
		Necrosis	Mild
	[Hepatocellular Adenoma TGLs = 2-5]		
	[Hepatocellular Carcinoma TGLs = 1-6]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
		Hyperplasia	Lymphoid, Minimal
* Urinary Bladder		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 327

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61749

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

Blood Vessel		Inflammation	Mild
Note: Glandular Stomach and Mesenteric Lymph Node,			
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Brain		Carcinoma	Metastatic (Pituitary Gland)
[Carcinoma TGLs = 1-1]			
* Gallbladder		Hyperplasia	Minimal
		Ulcer	Minimal
* Intestine Small, Duodenum		Inflammation	Minimal
* Liver		Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 3-6]			
* Lung		Alveolar/Bronchiolar Adenoma	
[Alveolar/Bronchiolar Adenoma TGLs = 4-12]			
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Carcinoma	
[Carcinoma TGLs = 2-9]			

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 327

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61749

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen

Hematopoietic Cell Proliferation

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 328

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61750

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Liver		Hepatocellular Adenoma	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 329

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61751

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 330

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61752

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Gallbladder

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Moderate
* Kidney		Nephropathy	Minimal
Mesentery	Fat	Necrosis	Minimal
[Necrosis TGLs = 1,2-6+12]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 331

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61753

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Eye	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum

OBSERVATIONS

* Islets, Pancreatic		Hyperplasia	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Hemorrhage	Mild
		Mineralization	Mild
		Necrosis	Moderate
	[Necrosis TGLs = 1-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
	[Hyperplasia TGLs = 2-9]		

PRIMARY CAUSE OF DEATH - Ovary Necrosis

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 332

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61754

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder	* Parathyroid Gland
---------------	---------------------

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Kidney		Nephropathy	Minimal
	[Nephropathy TGLs = 4-6]		
* Liver		Hepatocellular Carcinoma	Multiple
	[Hepatocellular Carcinoma TGLs = 1,2,8-5+12+13]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 5,6,7-4+6]		
* Lymph Node, Mandibular		Ectasia	Mild
Mesentery		Hepatocellular Carcinoma	Metastatic (Liver)
	Fat	Necrosis	Mild
	[Hepatocellular Carcinoma TGLs = 9-15]		
	[Necrosis TGLs = 3-14]		
* Nose	Turbinate	Atrophy	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Atrophy	Minimal
* Uterus		Angiectasis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 333

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61755

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Eye	* Gallbladder
* Heart	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Mammary Gland	* Nose
* Skin	* Stomach, Forestomach	* Urinary Bladder	

MISSING

* Parathyroid Gland	* Thyroid Gland
---------------------	-----------------

INSUFFICIENT TISSUE

* Trachea

OBSERVATIONS

* Adrenal Cortex		Histiocytic Sarcoma	
* Esophagus	Epithelium	Hyperplasia	Minimal
* Harderian Gland		Adenoma	
[Adenoma TGLs = 3-11]			
* Intestine Large, Cecum		Histiocytic Sarcoma	
* Intestine Large, Colon		Histiocytic Sarcoma	
* Kidney		Histiocytic Sarcoma	
		Nephropathy	Minimal
[Nephropathy TGLs = 6-6]			
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Atypical, Moderate
* Liver	Hepatocyte	Histiocytic Sarcoma	
		Necrosis	Minimal
[Necrosis TGLs = 4-5]			
* Lung		Histiocytic Sarcoma	
Lymph Node	Lumbar	Histiocytic Sarcoma	
[Histiocytic Sarcoma TGLs = 9-14]			
* Lymph Node, Bronchial		Histiocytic Sarcoma	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 333

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61755

ORGAN AND ACCOUNTABLE SITE STATUS

* Lymph Node, Mandibular		Histiocytic Sarcoma	
* Lymph Node, Mediastinal		Histiocytic Sarcoma	
[Histiocytic Sarcoma	TGLs = 2-3]		
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
[Histiocytic Sarcoma	TGLs = 7-12]		
Mesentery		Histiocytic Sarcoma	
[Histiocytic Sarcoma	TGLs = 8-13]		
* Ovary		Histiocytic Sarcoma	
* Pancreas		Histiocytic Sarcoma	
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Salivary Glands		Histiocytic Sarcoma	
* Spleen		Hematopoietic Cell Proliferation	Moderate
[Hematopoietic Cell Proliferation	TGLs = 5-5]		
* Stomach, Glandular		Histiocytic Sarcoma	
* Thymus		Histiocytic Sarcoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 334

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61756

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Intestine Large, Rectum		Inflammation	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	
[Cyst TGLs = 2-8]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Inflammation	Chronic Active, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Marked
[Hyperplasia TGLs = 3-9]			

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 335

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61757

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea

MISSING

* Gallbladder

OBSERVATIONS

* Adrenal Cortex		Lymphoma Malignant	
* Bone		Fibro-Osseous Lesion	Minimal
* Kidney		Lymphoma Malignant	
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-5]	Lymphoma Malignant	
* Lung		Lymphoma Malignant	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Nose	Olfactory Epi	Atrophy	Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Ovary		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
* Thymus		Ectopic Parathyroid Gland	Minimal
		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 336

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61758

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-6]		
* Lung		Alveolar/Bronchiolar Adenoma	
	[Alveolar/Bronchiolar Adenoma TGLs = 3-4]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
* Ovary	Olfactory Epi	Metaplasia	Respiratory, Minimal
		Cyst	
	[Cyst TGLs = 1-12]		
* Pancreas	Acinus	Atrophy	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Thrombosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 337

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61759

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Liver		Clear Cell Focus	
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
		Inflammation	Suppurative, Minimal
	Respirat Epith	Necrosis	Minimal
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus		Angiectasis	Minimal
		Thrombosis	Mild

[Thrombosis TGLs = 1-9]

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 338

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61760

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone Marrow |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Gallbladder | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic | * Kidney | * Lung |
| * Lymph Node, Bronchial | * Lymph Node, Mandibular | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric |
| * Mammary Gland | * Ovary | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Salivary Glands | * Skin | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | | |
|------------------------|----------------|-------------------------------|-------------------------|
| * Bone | | Fibro-Osseous Lesion | Minimal |
| * Larynx | Squam Epithel | Hyperplasia | Minimal |
| | | Inflammation | Chronic Active, Minimal |
| * Liver | | Clear Cell Focus | |
| * Nose | Respirat Epith | Accumulation, Hyaline Droplet | Minimal |
| | Olfactory Epi | Atrophy | Mild |
| | Turbinate | Atrophy | Minimal |
| | Olfactory Epi | Metaplasia | Respiratory, Minimal |
| * Spleen | | Hyperplasia | Lymphoid, Mild |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 339

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61761

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Eosinophilic Focus	
		Hepatoblastoma	
		Hepatocellular Carcinoma	
	[Hepatoblastoma TGLs = 9-6]		
	[Hepatocellular Carcinoma TGLs = 10-12]		
* Lung		Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 2,3,4,5,6,7-4]		
Lymph Node	Pancreatic	Hepatocellular Carcinoma	Metastatic (Liver)
	[Hepatocellular Carcinoma TGLs = 8-13]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 340

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61762

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

[Hyperplasia TGLs = 1-9]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 341

TRT#: 4

SEX: Female

DAY ON TEST: 703

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61763

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Ileum
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OBSERVATIONS

* Gallbladder		Hemangiosarcoma	Metastatic (Liver)
* Heart		Cardiomyopathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hemangiosarcoma	
	Hepatocyte	Hematopoietic Cell Proliferation	Mild
	[Hemangiosarcoma TGLs = 7-6]	Necrosis	Mild
	[Hematopoietic Cell Proliferation TGLs = 6-5]		
* Lung		Hematopoietic Cell Proliferation	Moderate
* Lymph Node, Bronchial		Hematopoietic Cell Proliferation	Mild
	[Hematopoietic Cell Proliferation TGLs = 2-4]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mediastinal		Hematopoietic Cell Proliferation	Mild
	[Hematopoietic Cell Proliferation TGLs = 3-3]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 341

TRT#: 4

SEX: Female

DAY ON TEST: 703

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61763

ORGAN AND ACCOUNTABLE SITE STATUS

[Cyst TGLs = 5-8]

* Spleen

Hematopoietic Cell Proliferation

Moderate

[Hematopoietic Cell Proliferation TGLs = 1-5]

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

PRIMARY CAUSE OF DEATH

- Liver Hemangiosarcoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 342

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61764

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Harderian Gland		Hyperplasia	Mild
	[Hyperplasia TGLs = 1-11]		
* Liver		Clear Cell Focus	
* Nose	Olfactory Epi	Atrophy	Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Ovary		Cyst	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 343

TRT#: 4

SEX: Female

DAY ON TEST: 680

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61765

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea		

MISSING

* Parathyroid Gland

OBSERVATIONS

* Heart		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 5,6,7-6+12+13]		
* Lung		Lymphoma Malignant	
Lymph Node	Renal	Lymphoma Malignant	
	Inguinal	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 8-14]		
	[Lymphoma Malignant TGLs = 11-15]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-8]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 10-7]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinates	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 343

TRT#: 4

SEX: Female

DAY ON TEST: 680

DOSE: 12.5 ppm

DISP: Natural Death

HISTO: 61765

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary		Lymphoma Malignant	
* Pancreas		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-5]		
* Thymus		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-3]		
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 9-9]		

PRIMARY CAUSE OF DEATH - Lung Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 344

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61766

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Mild
Mesentery	Fat	Necrosis	Mild
[Necrosis TGLs = 1-12]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
* Ovary		Cyst	
* Spleen		Hyperplasia	Lymphoid, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 345

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61767

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Nose	Olfactory Epi	Atrophy	Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 346

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61768

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Lung		Alveolar/Bronchiolar Adenoma	Multiple
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 2-9]		

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 347

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61769

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 348

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61770

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Nose	Turbinate	Atrophy	Minimal
* Ovary		Cyst	
[Cyst TGLs = 1-8]			
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 349

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 12.5 ppm

DISP: Terminal Sacrifice

HISTO: 61771

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Liver		Basophilic Focus	
		Eosinophilic Focus	
	[Eosinophilic Focus TGLs = 1-6]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thymus		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 350

TRT#: 4

SEX: Female

DAY ON TEST: 674

DOSE: 12.5 ppm

DISP: Moribund Sacrifice

HISTO: 61772

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
* Intestine Small, Duodenum		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
* Liver	Respirat Epith	Necrosis	Minimal
	[Fatty Change TGLs = 2-5]	Fatty Change	Moderate
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
* Ovary		Cyst	
* Pituitary Gland	Pars Intermed	Adenoma	
	[Adenoma TGLs = 1-9]		
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicular Cel	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Intermed Adenoma

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 501

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61623

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Thyroid Gland

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
* Intestine Small, Ileum		Hyperplasia	Lymphoid, Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 502

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61624

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Liver		Basophilic Focus	
* Nose	Respirat Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epi	Metaplasia	Squamous, Minimal
	Respirat Epi	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
		Hemangioma	
[Hemangioma TGLs = 2-8]			
* Pituitary Gland	Pars Intermed	Angiectasis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 502

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61624

ORGAN AND ACCOUNTABLE SITE STATUS

[Angiectasis TGLs = 1-9]

* Trachea

Epithelium

Regeneration

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 503

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61625

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Lymphoma Malignant	
Lymph Node	Lumbar	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 4-13]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Skin	Subcut Tiss	Fibrosarcoma	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 503

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61625

ORGAN AND ACCOUNTABLE SITE STATUS

[Fibrosarcoma TGLs = 1-12]			
* Spleen		Lymphoma Malignant	
[Lymphoma Malignant TGLs = 2-5]			
* Thymus		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Marked
[Hyperplasia TGLs = 3-9]			

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 504

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61626

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Larynx	Respirat Epith	Hyperplasia	Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-5]	Hyperplasia	Lymphoid, Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 505

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61627

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Thymus	* Thyroid Gland	

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 2-5]		
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Moderate
	[Hyperplasia TGLs = 1-12]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 505

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61627

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith Mucosa	Necrosis Regeneration	Minimal Minimal
* Stomach, Forestomach		Infiltration Cellular	Lymphoid, Minimal
* Stomach, Glandular		Infiltration Cellular	Lymphoid, Minimal
* Trachea	Epithelium	Hyperplasia Inflammation	Mild Chronic Active, Mild
* Urinary Bladder		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 506

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61628

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Thyroid Gland	* Trachea		

OBSERVATIONS

* Clitoral Gland		Hemangiosarcoma	Metastatic (Spleen)
* Kidney		Lymphoma Malignant	
* Lung		Lymphoma Malignant	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mesenteric		Ectasia	Mild
[Ectasia TGLs = 3-12]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
* Pancreas		Lymphoma Malignant	
* Spleen		Hemangiosarcoma	
		Lymphoma Malignant	
[Hemangiosarcoma TGLs = 1,2-5+12]			
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 506

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61628

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 507

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61629

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	

INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Kidney		Infarct	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	
	[Hepatocellular Adenoma TGLs = 1-5]		
	[Hepatocellular Carcinoma TGLs = 2-12]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea		Necrosis	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 508

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61630

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex	Zona Fasciult	Hypertrophy	Focal, Minimal
* Bone		Fibro-Osseous Lesion	Mild
* Eye	Cornea	Inflammation	Acute, Minimal
[Inflammation TGLs = 1-11]			
* Intestine Large, Cecum		Inflammation	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
Mesentery	Fat	Necrosis	Minimal
[Necrosis TGLs = 3-6]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
* Ovary		Cyst	
* Pituitary Gland	Pars Distalis	Carcinoma	
[Carcinoma TGLs = 2-9]			
* Trachea	Epithelium	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 509

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61631

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Eye	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cystadenoma	
	[Cystadenoma TGLs = 1-8]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 2,3-9]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 510

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61632

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Clitoral Gland	* Ovary
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Lymph Node, Mandibular		Hematopoietic Cell Proliferation	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 511

TRT#: 6

SEX: Female

DAY ON TEST: 592

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61633

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Liver	* Mammary Gland	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Thyroid Gland	* Trachea

MISSING

* Islets, Pancreatic

OBSERVATIONS

* Adrenal Cortex		Lymphoma Malignant	
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Harderian Gland		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Large, Colon		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Lung		Lymphoma Malignant	
Lymph Node	Pancreatic	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
		Lymphoma Malignant	

Note: TGL 9-13 is associated with the caudal lymph node

[Lymphoma Malignant TGLs = 7-6]

[Lymphoma Malignant TGLs = 4-14]

[Lymphoma Malignant TGLs = 9-13]

* Lymph Node, Bronchial Lymphoma Malignant

* Lymph Node, Mandibular Lymphoma Malignant

[Lymphoma Malignant TGLs = 10-8]

* Lymph Node, Mediastinal Lymphoma Malignant

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 511

TRT#: 6

SEX: Female

DAY ON TEST: 592

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61633

ORGAN AND ACCOUNTABLE SITE STATUS

	[Lymphoma Malignant	TGLs = 3-3]		
* Lymph Node, Mesenteric			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 8-12]		
* Nose	Olfactory Epi		Atrophy	Mild
	Turbinate		Atrophy	Mild
	Lamina Propria		Fibrosis	Minimal
			Inflammation	Suppurative, Mild
	Respirat Epith		Metaplasia	Squamous, Mild
	Olfactory Epi		Metaplasia	Respiratory, Mild
	Respirat Epith		Necrosis	Minimal
	Septum		Perforation	
	Mucosa		Regeneration	Mild
* Ovary			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 5,6-8+13]		
* Pancreas			Lymphoma Malignant	
* Spleen			Lymphoma Malignant	
* Stomach, Forestomach			Lymphoma Malignant	
* Stomach, Glandular			Lymphoma Malignant	
* Thymus			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 2-3]		
* Urinary Bladder			Lymphoma Malignant	
* Uterus	Endometrium		Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Lymph Node, Mesenteric Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 512

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61634

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Heart |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic | * Kidney |
| * Liver | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

INSUFFICIENT TISSUE

- * Lymph Node, Mediastinal

OBSERVATIONS

- | | | | |
|---|---|---|---|
| * Larynx | Squam Epithel | Hyperplasia
Inflammation
Hyperplasia | Minimal
Chronic Active, Minimal
Lymphoid, Mild |
| * Lymph Node, Bronchial
[Hyperplasia TGLs = 1-4] | | | |
| * Nose | Olfactory Epi
Olfactory Epi
Turbinat
Lamina Propria

Respirat Epith
Olfactory Epi
Mucosa | Accumulation, Hyaline Droplet
Atrophy
Atrophy
Fibrosis
Inflammation
Metaplasia
Metaplasia
Regeneration
Cyst | Mild
Mild
Minimal
Minimal
Suppurative, Mild
Squamous, Minimal
Respiratory, Minimal
Minimal |
| * Ovary
[Cyst TGLs = 2-8] | | | |
| * Spleen | | Hematopoietic Cell Proliferation | Minimal |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 513

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61635

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

INSUFFICIENT TISSUE

* Intestine Large, Rectum	* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Harderian Gland		Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 514

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61636

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lung	* Lymph Node, Mandibular	* Mammary Gland
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Bone Marrow		Lymphoma Malignant	
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Lymphoma Malignant	
Lymph Node	Renal	Lymphoma Malignant	
	Pancreatic	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-6]		
	[Lymphoma Malignant TGLs = 3-12]		
	[Lymphoma Malignant TGLs = 5-13]		
	[Lymphoma Malignant TGLs = 6-14]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 514

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61636

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Lymphoma Malignant	
* Pancreas		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Thymus		Lymphoma Malignant	
* Uterus		Angiectasis	Mild
	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 515

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61637

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Mammary Gland	* Parathyroid Gland
* Pituitary Gland	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Hepatocellular Adenoma	
		Lymphoma Malignant	
	[Hepatocellular Adenoma TGLs = 11-12]		
* Lung		Lymphoma Malignant	
Lymph Node	Axillary	Lymphoma Malignant	
	Renal	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-12]		
	[Lymphoma Malignant TGLs = 8-13]		
	[Lymphoma Malignant TGLs = 9-14]		
* Lymph Node, Bronchial		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 5-4]		
* Lymph Node, Mandibular		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-8]		
* Lymph Node, Mediastinal		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 4-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 10-6]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 515

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61637

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
		Lymphoma Malignant	
	[Cyst TGLs = 6,7-8]		
* Pancreas		Lymphoma Malignant	
* Salivary Glands		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-5]		
* Thymus		Ectopic Parathyroid Gland	Minimal
		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 516

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61638

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial

INSUFFICIENT TISSUE

* Adrenal Medulla

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
Mesentery	Fat	Necrosis	Minimal
	[Necrosis TGLs = 3-6]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Foreign Body	
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 516

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61638

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Respirat Epith Mucosa	Metaplasia Regeneration Luteoma	Squamous, Minimal Mild
[Luteoma TGLs = 2-8]			
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 517

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61639

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
	[Inflammation TGLs = 1-11]		
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 2-11]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Septum	Perforation	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 517

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61639

ORGAN AND ACCOUNTABLE SITE STATUS

* Salivary Glands	Mucosa	Regeneration	Minimal
* Spleen		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Uterus	Endometrium	Lymphoma Malignant	
		Hyperplasia	Cystic, Mild
		Polyp Stromal	

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 518

TRT#: 6

SEX: Female

DAY ON TEST: 581

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61640

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic	* Kidney
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Urinary Bladder			

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia Inflammation	Moderate Chronic Active, Minimal
* Liver	[Basophilic Focus TGLs = 3-6]	Basophilic Focus	
* Nose	Respirat Epith Olfactory Epi Olfactory Epi Turbinat	Accumulation, Hyaline Droplet Accumulation, Hyaline Droplet Atrophy Atrophy Inflammation	Minimal Minimal Minimal Minimal Suppurative, Mild
* Ovary		Hemorrhage Inflammation Mineralization Necrosis	Marked Minimal Mild Mild
* Trachea	[Hemorrhage TGLs = 1-12]	Regeneration	Mild
* Uterus	Epithelium Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 4-12]		

PRIMARY CAUSE OF DEATH - Ovary Hemorrhage

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 519

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61641

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Mineralization	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 520

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61642

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Eye	Cornea, Epithelium	Hyperplasia	Mild
	Cornea	Inflammation	Acute, Mild
	Antr Chamber	Inflammation	Suppurative, Marked
	[Inflammation TGLs = 5-11]		
* Heart		Lymphoma Malignant	
* Intestine Small, Duodenum		Polyp Adenomatous	
	[Polyp Adenomatous TGLs = 4-13]		
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 520

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61642

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Respirat Epith Mucosa	Metaplasia Regeneration Cyst Inflammation	Squamous, Minimal Minimal Marked
[Cyst TGLs = 2-8] [Inflammation TGLs = 3-12]			
* Spleen	[Lymphoma Malignant TGLs = 1-5]	Lymphoma Malignant	
* Thymus		Ectopic Parathyroid Gland	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 521

TRT#: 6

SEX: Female

DAY ON TEST: 714

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61643

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Clitoral Gland
* Esophagus	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Mammary Gland
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Inflammation	Chronic Active, Marked
		Necrosis	Marked
	[Inflammation TGLs = 5-12]		
* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Brain		Inflammation	Chronic, Minimal
* Eye	Cornea	Inflammation	Acute, Mild
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
	[Ulcer TGLs = 1-11]		
* Heart		Inflammation	Chronic Active, Mild
* Kidney		Amyloid Deposition	Marked
		Nephropathy	Moderate
	[Amyloid Deposition TGLs = 3,4-6]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Amyloid Deposition	Marked
		Hematopoietic Cell Proliferation	Minimal
		Inflammation	Marked
	Hepatocyte	Necrosis	Marked
	[Inflammation TGLs = 2-12]		
* Lung		Alveolar/Bronchiolar Adenoma	
		Inflammation	Chronic Active, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 521

TRT#: 6

SEX: Female

DAY ON TEST: 714

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61643

ORGAN AND ACCOUNTABLE SITE STATUS

* Lymph Node, Mandibular	Mediastinum	Inflammation Hematopoietic Cell Proliferation	Chronic Active, Minimal Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Plasma Cell, Moderate
* Nose	Olfactory Epi	Hyperplasia	Lymphoid, Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Atrophy	Minimal
		Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epi	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Inflammation	Minimal
* Pancreas		Inflammation	Chronic Active, Minimal
* Spleen		Amyloid Deposition	Mild
		Hematopoietic Cell Proliferation	Mild
		Inflammation	Marked
	[Inflammation TGLs = 6-5]		
* Stomach, Forestomach		Inflammation	Minimal
* Stomach, Glandular		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Liver Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Adrenal Cortex Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 522

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61644

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Clitoral Gland	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Brain		Infiltration Cellular	Lymphocyte, Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Necrosis	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 523

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61645

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Minimal
		Hyperplasia	Lymphoid, Minimal
* Thyroid Gland	Follicular Cel	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 524

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61646

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Liver		Clear Cell Focus	
		Hyperplasia	Lymphoid, Minimal
* Lung	[Alveolar/Bronchiolar Adenoma	Alveolar/Bronchiolar Adenoma	
	TGLs = 1-4]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 525

TRT#: 6

SEX: Female

DAY ON TEST: 620

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61647

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Urinary Bladder			

MISSING

* Thyroid Gland

OBSERVATIONS

* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Fatty Change	Minimal
[Fatty Change TGLs = 1-5]			
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
Peripheral Nerve		Degeneration	Mild
Skeletal Muscle		Degeneration	Minimal
* Thymus		Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 525

TRT#: 6

SEX: Female

DAY ON TEST: 620

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61647

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea

Epithelium

Regeneration

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Moderate

PRIMARY CAUSE OF DEATH

- Nose Inflammation

CONTRIBUTORY CAUSE OF DEATH

- Peripheral Nerve Degeneration

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 526

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61648

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Gallbladder

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Mineralization	Minimal
* Kidney		Hyperplasia	Lymphoid, Minimal
* Liver		Hepatocellular Adenoma	
		Hyperplasia	Lymphoid, Minimal
	[Hepatocellular Adenoma TGLs = 2-5]		
	[Hyperplasia TGLs = 3-5]		
* Lym Node Bron			
	Note: TGLS 1=NCL		
Lymph Node	Renal	Ectasia	Mild
	[Ectasia TGLs = 4-6]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 526

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61648

ORGAN AND ACCOUNTABLE SITE STATUS

Respirat Epith

Metaplasia

Squamous, Minimal

Respirat Epith

Necrosis

Minimal

Mucosa

Regeneration

Minimal

* Ovary

Cyst

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 527

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61649

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
* Lung	Respirat Epith	Necrosis	Minimal
	Alveolus, Epithelium	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Lymph Node	Renal	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 9-6]	
	[Lymphoma Malignant	TGLs = 4-13]	
	[Lymphoma Malignant	TGLs = 10-14]	
* Lymph Node, Mandibular		Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 3-8+12]	
* Lymph Node, Mediastinal		Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 6-3]	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 8-7]	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 527

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61649

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinat	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Moderate
	Lateral Wall	Inflammation	Chronic Active, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
* Ovary		Lymphoma Malignant	
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Salivary Glands		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-8+12]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 7-5]		
* Thymus		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 5-3]		
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 528

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61650

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
* Liver	[Basophilic Focus TGLs = 1-6]	Basophilic Focus	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Ovary		Cystadenoma	
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Polyp Stromal	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 529

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61651

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Parathyroid Gland

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 4-11]		
* Kidney		Nephropathy	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
Lymph Node	Lumbar	Ectasia	Moderate
	[Ectasia TGLs = 3-6]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 529

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61651

ORGAN AND ACCOUNTABLE SITE STATUS

	[Hyperplasia TGLs = 1-9]		
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 530

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61652

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
* Intestine Large, Cecum		Inflammation	Mild
* Liver		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
* Ovary		Luteoma	
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 531

TRT#: 6

SEX: Female

DAY ON TEST: 713

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61653

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Bone Marrow		Hemangiosarcoma	Metastatic (Spleen)
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
* Lung	Mediastinum	Inflammation	Suppurative, Minimal
	Pleura	Inflammation	Chronic Active, Mild
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mediastinal		Hemangiosarcoma	Metastatic (Spleen)
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Mild
	Mucosa	Regeneration	Moderate
* Ovary		Hemangiosarcoma	Metastatic (Spleen)
* Spleen		Hemangiosarcoma	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 531

TRT#: 6

SEX: Female

DAY ON TEST: 713

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61653

ORGAN AND ACCOUNTABLE SITE STATUS

[Hemangiosarcoma TGLs = 1,2-5+6]

* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

PRIMARY CAUSE OF DEATH - Spleen Hemangiosarcoma

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 532

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61654

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Mucosa	Regeneration	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Thymus		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 533

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61655

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Kidney		Infarct	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
[Hyperplasia TGLs = 1-4]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cystadenoma	
[Cystadenoma TGLs = 2-8]			
* Uterus	Endometrium	Hyperplasia	Cystic, Marked
[Hyperplasia TGLs = 3-9]			

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 534

TRT#: 6

SEX: Female

DAY ON TEST: 639

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61656

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Gallbladder

OBSERVATIONS

* Heart		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	
	[Alveolar/Bronchiolar Carcinoma		
	TGLs = 2-4]		
* Lymph Node, Bronchial		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 534

TRT#: 6

SEX: Female

DAY ON TEST: 639

DOSE: 25 ppm

DISP: Natural Death

HISTO: 61656

ORGAN AND ACCOUNTABLE SITE STATUS

	Septum	Perforation	
	Mucosa	Regeneration	Mild
Pleura		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
	[Alveolar/Bronchiolar Carcinoma TGLs = 4-12]		
Skeletal Muscle		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
* Thymus		Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
	[Alveolar/Bronchiolar Carcinoma TGLs = 3-3]		
* Trachea		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Minimal
* Uterus		Granular Cell Tumor Benign	
	Endometrium	Hyperplasia	Cystic, Minimal
	[Granular Cell Tumor Benign TGLs = 5-6]		

PRIMARY CAUSE OF DEATH - Lung Alveolar/Bronchiolar Carcinoma
 CONTRIBUTORY CAUSE OF DEATH - Thymus Alveolar/Bronchiolar Carcinoma Lung

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 535

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61657

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Urinary Bladder	

MISSING

* Clitoral Gland

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea, Epithelium	Ulcer	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
Lymph Node	Lumbar	Hyperplasia	Lymphoid, Moderate
[Hyperplasia TGLs = 3-6]			
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Parathyroid Gland		Hyperplasia	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 535

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61657

ORGAN AND ACCOUNTABLE SITE STATUS

[Hyperplasia TGLs = 2-3]			
* Pituitary Gland	Pars Distalis	Adenoma	
[Adenoma TGLs = 4-9]			
* Spleen		Hyperplasia	Lymphoid, Minimal
* Thyroid Gland		Carcinoma	
[Carcinoma TGLs = 1-3]			
* Trachea		Inflammation	Chronic Active, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 536

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61658

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Gallbladder | * Harderian Gland | * Heart |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic | * Kidney |
| * Lung | * Lymph Node, Bronchial | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Ovary | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Salivary Glands | * Skin | * Spleen |
| * Stomach, Forestomach | * Stomach, Glandular | * Thymus | * Thyroid Gland |
| * Urinary Bladder | | | |

INSUFFICIENT TISSUE

- * Lymph Node, Mediastinal

OBSERVATIONS

- | | | | |
|----------------------------|---|---|--|
| * Larynx | Squam Epithel | Hyperplasia
Inflammation
Cyst | Mild
Chronic Active, Minimal |
| * Liver | | | |
| [Cyst TGLs = 1-6] | | | |
| * Nose | Respirat Epith
Olfactory Epi
Turbinat
Lamina Propria | Accumulation, Hyaline Droplet
Atrophy
Atrophy
Fibrosis
Inflammation | Minimal
Minimal
Minimal
Minimal
Suppurative, Minimal |
| | Respirat Epith
Respirat Epith
Mucosa | Metaplasia
Necrosis
Regeneration | Squamous, Minimal
Minimal
Minimal |
| * Trachea | Epithelium | Regeneration | Minimal |
| * Uterus | Endometrium | Hyperplasia | Cystic, Moderate |
| [Hyperplasia TGLs = 2-9] | | | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 537

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61659

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Parathyroid Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 537

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61659

ORGAN AND ACCOUNTABLE SITE STATUS

* Pituitary Gland

Pars Distalis

Angiectasis

Mild

Pars Distalis

Inflammation

Suppurative, Minimal

* Uterus

Endometrium

Angiectasis

Moderate

Hyperplasia

Cystic, Minimal

[Angiectasis TGLs = 1-9]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 538

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61660

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Urinary Bladder			

MISSING

* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Minimal
* Harderian Gland		Adenoma	
[Adenoma TGLs = 4-11]			
* Kidney		Hyperplasia	Lymphoid, Mild
		Infarct	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
* Liver		Hepatocellular Carcinoma	
[Hepatocellular Carcinoma TGLs = 3-5]			
Mesentery	Fat	Necrosis	Mild
[Necrosis TGLs = 2-6]			
* Nose	Turbinate	Atrophy	Minimal
	Olfactory Epi	Atrophy	Moderate
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 538

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61660

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea

Epithelium

Regeneration

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Marked

[Hyperplasia TGLs = 1-9]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 539

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61661

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Urinary Bladder		

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
* Kidney		Nephropathy	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Foreign Body	
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Trachea	Epithelium	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 539

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61661

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Marked

[Hyperplasia TGLs = 1-9]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 540

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61662

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Kidney		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 15-6]		
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Hepatocellular Carcinoma	
	[Hepatocellular Carcinoma TGLs = 13-16]	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 9,10,11,12,14-5+13+14+15+16]		
* Lung		Lymphoma Malignant	
Lymph Node	Deep Cervical	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
		Lymphoma Malignant	
	Pancreatic	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	Renal	Lymphoma Malignant	

Note: TGL5-c-lymph node, brachial and TGL18-c-lymph node, caudal

[Lymphoma Malignant TGLs = 6-6]
[Lymphoma Malignant TGLs = 2-19]
[Lymphoma Malignant TGLs = 5,18-20+23]
[Lymphoma Malignant TGLs = 19-24]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 540

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61662

ORGAN AND ACCOUNTABLE SITE STATUS

	[Lymphoma Malignant	TGLs = 17-22]		
	[Lymphoma Malignant	TGLs = 16-21]		
* Lymph Node, Bronchial			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 4-4]		
* Lymph Node, Mandibular			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 1-18]		
* Lymph Node, Mediastinal			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 3-3]		
* Lymph Node, Mesenteric			Lymphoma Malignant	
	[Lymphoma Malignant	TGLs = 20-17]		
* Nose	Respirat Epith		Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi		Atrophy	Moderate
	Turbinate		Atrophy	Minimal
	Lamina Propria		Fibrosis	Minimal
			Inflammation	Suppurative, Minimal
	Olfactory Epi		Metaplasia	Respiratory, Minimal
	Respirat Epith		Metaplasia	Squamous, Minimal
	Respirat Epith		Necrosis	Minimal
* Ovary			Lymphoma Malignant	
* Spleen			Lymphoma Malignant	
			Necrosis	Marked
	[Lymphoma Malignant	TGLs = 7-12]		
	[Necrosis	TGLs = 8-12]		
* Stomach, Forestomach	Epithelium		Hyperplasia	Minimal
			Inflammation	Minimal
* Thymus			Lymphoma Malignant	
* Uterus	Endometrium		Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 541

TRT#: 6

SEX: Female

DAY ON TEST: 620

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61663

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Mammary Gland
* Parathyroid Gland	* Pituitary Gland	* Trachea	

OBSERVATIONS

* Bone Marrow		Lymphoma Malignant	
* Eye		Lymphoma Malignant	
* Harderian Gland		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Intestine Large, Rectum		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Mild
		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
Lymph Node	Pancreatic	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 3-12]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 2-3]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Moderate
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
		Lymphoma Malignant	
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 541

TRT#: 6

SEX: Female

DAY ON TEST: 620

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61663

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Minimal
* Ovary		Lymphoma Malignant	
* Pancreas		Lymphoma Malignant	
* Salivary Glands		Lymphoma Malignant	
* Skin		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
* Stomach, Forestomach		Lymphoma Malignant	
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Thyroid Gland		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Lymph Node, Mediastinal Lymphoma Malignant

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 542

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61664

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Brain		Infiltration Cellular	Lymphocyte, Minimal
* Kidney		Hyperplasia	Lymphoid, Minimal
* Larynx	Respirat Epith	Regeneration	Minimal
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
[Cyst TGLs = 1-8]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 543

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61665

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Urinary Bladder		

MISSING

* Gallbladder	* Parathyroid Gland
---------------	---------------------

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
[Inflammation TGLs = 1-11]			
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Lung		Alveolar/Bronchiolar Carcinoma	
	Alveolus	Infiltration Cellular	Histiocyte, Mild
[Alveolar/Bronchiolar Carcinoma TGLs = 5-4]			
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
[Hyperplasia TGLs = 4-4]			
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinat	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 543

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61665

ORGAN AND ACCOUNTABLE SITE STATUS

* Pituitary Gland [Adenoma TGLs = 2-9]	Pars Distalis	Adenoma	
* Spleen [Hyperplasia TGLs = 3-5]		Hyperplasia	Lymphoid, Mild
* Trachea		Inflammation	Chronic Active, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 544

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61666

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hyperplasia	Lymphoid, Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 545

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61667

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea			

INSUFFICIENT TISSUE

* Intestine Large, Rectum	* Lymph Node, Mandibular
---------------------------	--------------------------

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Fibrosis	Minimal
	Cornea	Inflammation	Acute, Mild
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
	[Inflammation TGLs = 1-11]		
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Lung		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 545

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61667

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Angiectasis	Minimal
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Thymus		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 546

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61668

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Kidney		Lymphoma Malignant	
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Necrosis	Minimal
* Liver		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 1-6]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Necrosis	Minimal
* Ovary		Cyst	
		Lymphoma Malignant	

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 546

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61668

ORGAN AND ACCOUNTABLE SITE STATUS

[Cyst TGLs = 2-8]

* Spleen

Lymphoma Malignant

* Thymus

Lymphoma Malignant

* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 547

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61669

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Harderian Gland		Adenoma	
[Adenoma TGLs = 1-11]			
* Kidney		Lymphoma Malignant	
[Lymphoma Malignant TGLs = 6,7-6]			
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
* Liver		Hepatocellular Adenoma	
[Hepatocellular Adenoma TGLs = 5-6]			
* Lymph Node, Mesenteric		Lymphoma Malignant	
Mesentery	Fat	Necrosis	Mild
[Necrosis TGLs = 4-12]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 547

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61669

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Respirat Epith	Metaplasia	Squamous, Minimal
* Spleen		Cyst	
	[Lymphoma Malignant TGLs = 3-5]	Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
	[Thrombosis TGLs = 2-9]	Thrombosis	Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 548

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61670

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Gallbladder	* Lymph Node, Mandibular
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OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
* Kidney		Metaplasia	Osseous, Minimal
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 1-5]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Olfactory Epi	Metaplasia	Respiratory, Mild
	Mucosa	Regeneration	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2-5]		
* Thymus		Ectopic Parathyroid Gland	Minimal
		Hyperplasia	Lymphoid, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 548

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61670

ORGAN AND ACCOUNTABLE SITE STATUS

* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 549

TRT#: 6

SEX: Female

DAY ON TEST: 600

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61671

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

INSUFFICIENT TISSUE

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adren Cortex			
Note: TGL 2=NCL			
* Bone		Fibro-Osseous Lesion	Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
* Liver		Clear Cell Focus	
		Fatty Change	Mild
[Fatty Change TGLs = 1-5]			
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Minimal
* Pancreas	Acinus	Atrophy	Minimal
Peripheral Nerve		Degeneration	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
		Inflammation	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 549

TRT#: 6

SEX: Female

DAY ON TEST: 600

DOSE: 25 ppm

DISP: Moribund Sacrifice

HISTO: 61671

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea

Necrosis

Minimal

Epithelium

Regeneration

Minimal

* Uterus

Endometrium

Hyperplasia

Cystic, Marked

PRIMARY CAUSE OF DEATH - Peripheral Nerve Degeneration

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 550

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61672

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Bone Marrow
- * Brain
- * Gallbladder
- * Harderian Gland
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Jejunum
- * Islets, Pancreatic
- * Parathyroid Gland
- * Pituitary Gland
- * Stomach, Forestomach
- * Stomach, Glandular
- Blood Vessel
- * Clitoral Gland
- * Heart
- * Intestine Small, Duodenum
- * Lymph Node, Mesenteric
- * Salivary Glands
- * Thyroid Gland
- * Bone
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Skin
- * Trachea

INSUFFICIENT TISSUE

- * Lymph Node, Mediastinal

OBSERVATIONS

- * Eye
 - * Kidney
 - * Larynx
 - * Liver
 - * Lung
 - * Lymph Node, Bronchial
 - * Lymph Node, Mandibular
 - * Nose
 - * Ovary
 - * Pancreas
 - * Spleen
- | | | |
|----------------|-------------------------------|----------------------|
| Cornea | Inflammation | Acute, Minimal |
| Squam Epithel | Lymphoma Malignant | |
| | Hyperplasia | Minimal |
| | Lymphoma Malignant | |
| | Lymphoma Malignant | |
| | Lymphoma Malignant | |
| Olfactory Epi | Accumulation, Hyaline Droplet | Minimal |
| Respirat Epith | Accumulation, Hyaline Droplet | Minimal |
| Olfactory Epi | Atrophy | Mild |
| Turbinate | Atrophy | Minimal |
| Lamina Propria | Fibrosis | Minimal |
| | Foreign Body | |
| | Inflammation | Suppurative, Minimal |
| Olfactory Epi | Metaplasia | Respiratory, Minimal |
| Respirat Epith | Metaplasia | Squamous, Minimal |
| Mucosa | Regeneration | Minimal |
| | Luteoma | |
| | Lymphoma Malignant | |
| | Lymphoma Malignant | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 550

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 25 ppm

DISP: Terminal Sacrifice

HISTO: 61672

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus

Lymphoma Malignant

* Urinary Bladder

Lymphoma Malignant

* Uterus

Endometrium

Hyperplasia

Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 701

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61523

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Gallbladder		Inflammation	Minimal
* Harderian Gland		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 701

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61523

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Moderate
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 702

TRT#: 8

SEX: Female

DAY ON TEST: 346

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61524

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Heart		Inflammation	Chronic Active, Moderate
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Moderate
* Lung	Mediastinum	Inflammation	Chronic Active, Minimal
		Inflammation	Chronic Active, Mild
	Pleura	Inflammation	Suppurative, Mild
	Bronchus, Epithelium	Regeneration	Mild
		Inflammation	Chronic Active, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Mild
* Lymph Node, Mandibular			
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 702

TRT#: 8

SEX: Female

DAY ON TEST: 346

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61524

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Necrosis	Moderate
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Moderate
* Salivary Glands		Inflammation	Chronic Active, Mild
* Spleen		Hematopoietic Cell Proliferation	Moderate
* Thymus		Inflammation	Chronic Active, Marked
* Trachea		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

CONTRIBUTORY CAUSE OF DEATH - Heart Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 703

TRT#: 8

SEX: Female

DAY ON TEST: 646

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61525

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic	* Kidney
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Urinary Bladder			

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum			

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Eye	Cornea	Inflammation	Acute, Mild
	Cornea	Necrosis	Mild
* Larynx	Lumen	Exudate	Marked
	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Lung	Bronchus, Submucosa	Fibrosis	Mild
	Mediastinum	Inflammation	Suppurative, Moderate
		Inflammation	Suppurative, Mild
	Bronchus	Inflammation	Suppurative, Marked
	Bronchus, Epithelium	Necrosis	Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 703

TRT#: 8

SEX: Female

DAY ON TEST: 646

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61525

ORGAN AND ACCOUNTABLE SITE STATUS

	Inflammation	Suppurative, Marked
	Metaplasia	Respiratory, Mild
	Metaplasia	Squamous, Moderate
	Necrosis	Mild
	Perforation	
	Regeneration	Mild
* Thymus	Atrophy	Minimal
	Inflammation	Chronic Active, Minimal
* Trachea	Exudate	Marked
	Fibrosis	Minimal
	Inflammation	Chronic Active, Marked
	Necrosis	Marked
* Uterus	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Trachea Inflammation

CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 704

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61526

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Mandibular

INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Kidney		Infarct	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Lung		Alveolar/Bronchiolar Adenoma	
	Bronchiole, Epithelium	Hyperplasia	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchus, Epithelium	Regeneration	Moderate
	[Alveolar/Bronchiolar Adenoma TGLs = 4-4]		
* Nose	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 704

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61526

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Moderate
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 705

TRT#: 8

SEX: Female

DAY ON TEST: 466

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61527

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	* Pituitary Gland	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

Blood Vessel		Inflammation	Moderate
Note: Heart, Larynx, and glandular stomach			
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
Ear		Inflammation	Suppurative, Minimal
* Eye	Antr Chamber	Inflammation	Suppurative, Minimal
	[Inflammation TGLs = 1-11]		
* Heart		Polyarteritis	Minimal
* Larynx		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Foreign Body	
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 705

TRT#: 8

SEX: Female

DAY ON TEST: 466

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61527

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Necrosis	Moderate
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Moderate
* Spleen		Hyperplasia	Lymphoid, Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

CONTRIBUTORY CAUSE OF DEATH - Ear Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 706

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61528

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Urinary Bladder			

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Mild
	Respirat Epith	Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
* Lung	Bronchus, Submucosa	Fibrosis	Minimal
	Bronchus, Epithelium	Necrosis	Minimal
	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mandibular		Ectasia	Mild
	[Ectasia TGLs = 2-8]	Hyperplasia	Lymphoid, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Foreign Body	
		Inflammation	Suppurative, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 706

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61528

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Stomach, Glandular		Inflammation	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
	Epithelium	Metaplasia	Squamous, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Marked

[Hyperplasia TGLs = 3-9]

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 707

TRT#: 8

SEX: Female

DAY ON TEST: 260

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61529

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Thymus
* Thyroid Gland	* Urinary Bladder		

INSUFFICIENT TISSUE

* Pituitary Gland

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Spleen		Hyperplasia	Lymphoid, Minimal
* Stomach, Glandular		Mineralization	Minimal
* Trachea		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 707

TRT#: 8

SEX: Female

DAY ON TEST: 260

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61529

ORGAN AND ACCOUNTABLE SITE STATUS

PRIMARY CAUSE OF DEATH

- Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 708

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61530

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Urinary Bladder		

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Moderate
	Cornea, Epithelium	Ulcer	Mild
	[Inflammation TGLs = 1-11]		
* Harderian Gland		Pigmentation	Porphyrin, Mild
	[Pigmentation TGLs = 4-11]		
* Heart		Cardiomyopathy	Minimal
		Polyarteritis	Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Liver		Cyst	
	[Cyst TGLs = 3-5]		
* Lung		Foreign Body	
	Bronchiole, Epithelium	Hyperplasia	Minimal
	Bronchiole	Inflammation	Chronic, Minimal
	Mediastinum	Inflammation	Chronic Active, Minimal
* Nose	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 708

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61530

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi Glands, Respirat Epith Lamina Propria	Atrophy Cyst Fibrosis Inflammation	Minimal Minimal Suppurative, Marked
	Olfactory Epi Respirat Epith Glands, Sinus Respirat Epith Mucosa Pars Intermed	Metaplasia Metaplasia Metaplasia Necrosis Regeneration Adenoma	Respiratory, Marked Squamous, Moderate Respiratory, Minimal Mild Moderate
* Pituitary Gland [Adenoma TGLs = 2-9]			
* Stomach, Forestomach	Epithelium Submucosa Epithelium	Hyperplasia Fibrosis Hyperplasia Inflammation	Minimal Moderate Mild Chronic Active, Minimal
* Trachea	Epithelium	Metaplasia Necrosis	Squamous, Mild Minimal
* Uterus	Epithelium Endometrium	Regeneration Hyperplasia	Mild Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 709

TRT#: 8

SEX: Female

DAY ON TEST: 480

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61531

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Adrenal Cortex		Hematopoietic Cell Proliferation	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Lens	Cataract	Minimal
	Cornea	Inflammation	Acute, Minimal
* Harderian Gland		Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Liver		Hematopoietic Cell Proliferation	Mild
	Hepatocyte	Necrosis	Minimal
* Lung	Bronchus, Epithelium	Degeneration	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchiole	Inflammation	Suppurative, Mild
	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Regeneration	Marked
* Lymph Node, Mandibular		Infiltration Cellular	Polymorphnuclr, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Mild
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 709

TRT#: 8

SEX: Female

DAY ON TEST: 480

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61531

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Moderate
* Ovary		Inflammation	Marked
	[Inflammation TGLs = 2-8]		
* Skin		Inflammation	Chronic Active, Marked
	Subcut Tiss	Necrosis	Marked
	[Inflammation TGLs = 3-12]		
	[Necrosis TGLs = 3-12]		
* Spleen		Hematopoietic Cell Proliferation	Marked
	[Hematopoietic Cell Proliferation TGLs = 1-5]		
* Thymus		Atrophy	Mild
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Marked
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Trachea Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Ovary Inflammation
 - Skin Inflammation
 - Skin Subcut Tiss Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 710

TRT#: 8

SEX: Female

DAY ON TEST: 656

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61532

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder	

MISSING

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Moderate
* Liver		Cyst	
[Cyst TGLs = 3-5]			
* Lung	Mediastinum	Inflammation	Suppurative, Minimal
	Bronchus	Inflammation	Suppurative, Minimal
	Bronchus, Epithelium	Necrosis	Minimal
	Bronchus, Epithelium	Regeneration	Moderate
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 710

TRT#: 8

SEX: Female

DAY ON TEST: 656

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61532

ORGAN AND ACCOUNTABLE SITE STATUS

	Mucosa	Regeneration	Minimal
* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Moderate
		Ectopic Parathyroid Gland	Minimal
* Thyroid Gland		Inflammation	Chronic Active, Mild
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Marked
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
	Epithelium	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

PRIMARY CAUSE OF DEATH - Trachea Inflammation

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 711

TRT#: 8

SEX: Female

DAY ON TEST: 669

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61533

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum			

OBSERVATIONS

* Adrenal Cortex		Hemorrhage	Mild
* Heart		Inflammation	Chronic Active, Minimal
		Necrosis	Mild
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Angiectasis	Mild
[Angiectasis TGLs = 1-6]			
* Lung	Bronchus, Submucosa	Fibrosis	Minimal
	Mediastinum	Inflammation	Chronic Active, Minimal
	Bronchus, Epithelium	Necrosis	Minimal
	Bronchus, Epithelium	Regeneration	Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 711

TRT#: 8

SEX: Female

DAY ON TEST: 669

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61533

ORGAN AND ACCOUNTABLE SITE STATUS

	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal
* Ovary		Inflammation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
	Epithelium	Regeneration	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[Hyperplasia TGLs = 2-9]		

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 712

TRT#: 8

SEX: Female

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61534

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Eye	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 2-11]		
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Lung	Bronchus, Smooth Muscle	Mineralization	Mild
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Hematopoietic Cell Proliferation	Moderate
		Hyperplasia	Plasma Cell, Moderate
	[Hyperplasia TGLs = 1-6+8]		
* Lymph Node, Mesenteric		Hematopoietic Cell Proliferation	Minimal
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 712

TRT#: 8

SEX: Female

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61534

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Necrosis	Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Marked
* Ovary		Cyst	
	[Cyst TGLs = 4-8]		
* Spleen		Hematopoietic Cell Proliferation	Moderate
	[Hematopoietic Cell Proliferation TGLs = 3-5]		
* Thymus		Atrophy	Mild
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Mild
	Carina	Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 713

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61535

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Urinary Bladder

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	Cornea	Necrosis	Mild
	Cornea, Epithelium	Ulcer	Minimal
	[Necrosis TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Moderate
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Mild
	[Hyperplasia TGLs = 2-6]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 713

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61535

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Moderate
* Spleen		Hyperplasia	Lymphoid, Moderate
* Stomach, Glandular		Inflammation	Minimal
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 714

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61536

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder		

OBSERVATIONS

Blood Vessel		Inflammation	Minimal
Note: Trachea			
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	[Mineralization TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Smooth Muscle	Mineralization	Mild
	Bronchus, Epithelium	Necrosis	Minimal
	Lymph Node	Hyperplasia	Lymphoid, Mild
	[Hyperplasia TGLs = 2-6]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 714

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61536

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Moderate
* Thymus		Inflammation	Chronic Active, Mild
* Trachea	Submucosa	Fibrosis	Marked
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
	Carina, Epithelium	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 715

TRT#: 8

SEX: Female

DAY ON TEST: 271

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61537

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

AUTO PRECLUDES DIAG.

* Intestine Small, Ileum

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Minimal
* Liver	Kupffer Cell	Hypertrophy	Minimal
* Lung	Mediastinum	Inflammation	Chronic Active, Minimal
	Pleura	Inflammation	Suppurative, Minimal
	Bronchus, Epithelium	Regeneration	Minimal
Note: TGLE 2=NCL			
Note: TGL,3=NCL			
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Lymph Node, Mediastinal		Inflammation	Chronic Active, Mild
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 715

TRT#: 8

SEX: Female

DAY ON TEST: 271

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61537

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi Mucosa	Necrosis Regeneration Inflammation	Minimal Mild Mild
* Ovary		Inflammation	Moderate
* Spleen		Necrosis	Moderate
* Trachea		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation
CONTRIBUTORY CAUSE OF DEATH - Spleen Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 716

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61538

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Esophagus	* Gallbladder	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Parathyroid Gland
* Pituitary Gland	* Stomach, Glandular	* Thymus	* Thyroid Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Brain		Lymphoma Malignant	
* Clitoral Gland		Lymphoma Malignant	
* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
* Harderian Gland		Lymphoma Malignant	
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Cecum		Lymphoma Malignant	
* Islets, Pancreatic		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Liver		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 9,10-5+12]		
* Lung	Interstitialium	Fibrosis	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
		Lymphoma Malignant	
	Bronchus, Smooth Muscle	Mineralization	Minimal
	Bronchus, Epithelium	Regeneration	Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 716

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61538

ORGAN AND ACCOUNTABLE SITE STATUS

[Lymphoma Malignant	TGLs = 3-4]		
Lymph Node	Deep Cervical	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 4-12]		
[Lymphoma Malignant	TGLs = 5-6]		
[Lymphoma Malignant	TGLs = 7-13]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 1-8]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 8-7]		
* Mammary Gland		Lymphoma Malignant	
* Nose		Adenocarcinoma	
	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Glands, Respirat Epith	Cyst	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Marked
* Ovary		Lymphoma Malignant	
* Pancreas		Lymphoma Malignant	
* Salivary Glands		Inflammation	Chronic Active, Mild
* Skin		Inflammation	Chronic Active, Marked
Note: skin inflammation overlying the nasal cavity			
* Spleen		Lymphoma Malignant	
[Lymphoma Malignant	TGLs = 6-5]		

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 716

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61538

ORGAN AND ACCOUNTABLE SITE STATUS

* Stomach, Forestomach		Lymphoma Malignant	
* Trachea	Submucosa	Fibrosis	Mild
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Marked
* Urinary Bladder		Lymphoma Malignant	
* Uterus		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 717

TRT#: 8

SEX: Female

DAY ON TEST: 325

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61539

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | Blood Vessel | * Bone |
| * Bone Marrow | * Esophagus | * Eye | * Gallbladder |
| * Harderian Gland | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic |
| * Kidney | * Mammary Gland | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Stomach, Forestomach |
| * Stomach, Glandular | | | |

MISSING

- * Clitoral Gland

OBSERVATIONS

- | | | | |
|---------------------------|---------------------------|-------------------------------|---------------------|
| * Brain | | Infiltration Cellular | Lymphocyte, Minimal |
| * Heart | | Mineralization | Minimal |
| * Larynx | Squam Epithel | Hyperplasia | Mild |
| | Respirat Epith | Metaplasia | Squamous, Mild |
| | Respirat Epith | Regeneration | Mild |
| * Liver | Centrilobular, Hepatocyte | Hypertrophy | Minimal |
| * Lung | Bronchus, Epithelium | Regeneration | Mild |
| * Lymph Node, Bronchial | | Necrosis | Lymphoid, Minimal |
| * Lymph Node, Mandibular | | Lymphoma Malignant | |
| * Lymph Node, Mediastinal | | Necrosis | Lymphoid, Minimal |
| * Lymph Node, Mesenteric | | Lymphoma Malignant | |
| * Nose | Respirat Epith | Accumulation, Hyaline Droplet | Minimal |
| | Olfactory Epi | Atrophy | Mild |
| | Turbinate | Atrophy | Minimal |
| | Lamina Propria | Fibrosis | Minimal |
| | | Inflammation | Suppurative, Marked |
| | Olfactory Epi | Metaplasia | Respiratory, Mild |
| | Respirat Epith | Metaplasia | Squamous, Moderate |
| | Respirat Epith | Necrosis | Mild |
| | Septum | Perforation | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 717

TRT#: 8

SEX: Female

DAY ON TEST: 325

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61539

ORGAN AND ACCOUNTABLE SITE STATUS

* Skin	Mucosa	Regeneration	Mild
		Inflammation	Chronic Active, Moderate
	Subcut Tiss	Necrosis	Minimal
	[Necrosis TGLs = 1-12]		
* Spleen		Lymphoma Malignant	
		Necrosis	Minimal
* Thymus		Lymphoma Malignant	
* Thyroid Gland		Mineralization	Minimal
* Trachea		Necrosis	Minimal
	Epithelium	Regeneration	Moderate
* Urinary Bladder		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 718

TRT#: 8

SEX: Female

DAY ON TEST: 559

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61540

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Urinary Bladder	

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
---------------	-----------------------------	--------------------------	----------------------------

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Mild
* Eye	Cornea	Mineralization	Minimal
[Mineralization TGLs = 1-11]			
* Larynx	Lumen	Exudate	Marked
	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
* Lung	Bronchus, Epithelium	Degeneration	Moderate
	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Minimal
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 718

TRT#: 8

SEX: Female

DAY ON TEST: 559

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61540

ORGAN AND ACCOUNTABLE SITE STATUS

	Mucosa	Regeneration	Minimal
* Ovary		Cyst	
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Marked
	Submucosa	Fibrosis	Moderate
	Glands	Hyperplasia	Mild
		Inflammation	Chronic Active, Marked
		Necrosis	Mild
	Epithelium	Regeneration	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Trachea Inflammation

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 719

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61541

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Mammary Gland	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Minimal
* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
	[Ulcer TGLs = 1-11]		
* Gallbladder		Inflammation	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Degeneration	Mild
	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 719

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61541

ORGAN AND ACCOUNTABLE SITE STATUS

	Mucosa	Regeneration	Moderate
* Ovary		Cyst	
* Pancreas		Cyst	
* Thymus		Hyperplasia	Lymphoid, Moderate
* Trachea	Submucosa	Fibrosis	Marked
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 720

TRT#: 8

SEX: Female

DAY ON TEST: 655

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61542

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Eye	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Lumen	Exudate	Marked
	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Moderate
* Liver		Hemangiosarcoma	
	[Hemangiosarcoma TGLs = 3-6]		
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 720

TRT#: 8

SEX: Female

DAY ON TEST: 655

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61542

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus		Atrophy	Mild
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Marked
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
	Epithelium	Regeneration	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

[Hyperplasia TGLs = 2-9]

PRIMARY CAUSE OF DEATH - Nose Respirat Epith Metaplasia

CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation

- Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 721

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61543

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	* Uterus

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Mineralization	Minimal
	[Mineralization TGLs = 4-11]		
* Kidney		Inflammation	Marked
	[Inflammation TGLs = 3-6]		
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Mucosa	Regeneration	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 721

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61543

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary		Cyst	
	[Cyst TGLs = 2-8]		
* Skin		Squamous Cell Carcinoma	
	[Squamous Cell Carcinoma TGLs = 1-8]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 722

TRT#: 8

SEX: Female

DAY ON TEST: 252

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61544

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Eye	* Gallbladder	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	* Uterus

MISSING

* Clitoral Gland

AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Marked
* Heart		Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Submucosa	Fibrosis	Minimal
	Mediastinum	Inflammation	Chronic Active, Moderate
	Pleura	Inflammation	Suppurative, Mild
	Bronchus, Epithelium	Regeneration	Minimal
* Lymph Node, Bronchial		Inflammation	Chronic Active, Marked
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 722

TRT#: 8

SEX: Female

DAY ON TEST: 252

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61544

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Ovary		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Atrophy	Mild
		Ectopic Parathyroid Gland	Minimal
		Histiocytic Sarcoma	
* Trachea		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 723

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61545

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder
* Uterus			

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Mild
	[Mineralization TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus	Regeneration	Minimal
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Moderate
	[Hyperplasia TGLs = 3-6]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
	[Hyperplasia TGLs = 2-8]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 723

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61545

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
[Cyst TGLs = 4-8]			
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Minimal
	Carina, Submucosa	Mineralization	Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 724

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61546

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

OBSERVATIONS

* Brain		Infiltration Cellular	Lymphocyte, Mild
* Eye	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
	[Mineralization TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
* Lung	Bronchus, Submucosa	Regeneration	Mild
	Bronchus, Epithelium	Fibrosis	Minimal
	Olfactory Epi	Regeneration	Moderate
* Nose	Turbinate	Atrophy	Minimal
	Lamina Propria	Atrophy	Mild
		Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Trachea	Submucosa	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 724

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61546

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 725

TRT#: 8

SEX: Female

DAY ON TEST: 515

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61547

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Pancreas	* Stomach, Glandular	

OBSERVATIONS

* Eye	Cornea	Mineralization	Mild
	Cornea, Epithelium	Ulcer	Mild
* Heart		Inflammation	Chronic Active, Mild
* Larynx	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Eosinophilic Focus	
	[Eosinophilic Focus TGLs = 1-5]		
* Lung	Mediastinum	Inflammation	Suppurative, Mild
* Lymph Node, Mediastinal		Inflammation	Chronic Active, Minimal
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 725

TRT#: 8

SEX: Female

DAY ON TEST: 515

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61547

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Mucosa	Regeneration	Mild
* Trachea		Inflammation	Moderate
	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Moderate
* Uterus	Epithelium	Regeneration	Minimal
	Endometrium	Hyperplasia	Cystic, Mild

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 726

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61548

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Clitoral Gland	* Esophagus	* Gallbladder	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder	* Uterus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Brain		Inflammation	Acute, Moderate
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 1-11]		
* Harderian Gland		Inflammation	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Marked
* Liver		Basophilic Focus	
	[Basophilic Focus TGLs = 2-5]		
* Lung	Bronchus, Epithelium	Regeneration	Marked
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 726

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61548

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus		Atrophy	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Brain Inflammation

CONTRIBUTORY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 727

TRT#: 8

SEX: Female

DAY ON TEST: 412

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61549

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Kidney	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland	* Ovary
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Thyroid Gland	* Urinary Bladder	* Uterus

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Pancreas	* Spleen
* Stomach, Glandular			

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Eye	Cornea	Inflammation	Acute, Minimal
* Heart		Inflammation	Chronic Active, Mild
* Nose	Turbinate	Atrophy	Moderate
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
* Thymus		Atrophy	Minimal
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 728

TRT#: 8

SEX: Female

DAY ON TEST: 670

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61550

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Gallbladder	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
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INSUFFICIENT TISSUE

* Intestine Large, Cecum

OBSERVATIONS

* Brain		Infiltration Cellular	Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Eye	Lens	Cataract	Mild
	Cornea	Inflammation	Acute, Minimal
	[Inflammation TGLs = 2-11]		
* Harderian Gland		Hyperplasia	Minimal
* Heart		Inflammation	Chronic Active, Minimal
* Larynx	Squam Epithel	Hyperplasia	Marked
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Atypical, Moderate
	Respirat Epith	Necrosis	Moderate
* Lung	Mediastinum	Inflammation	Chronic Active, Marked
		Inflammation	Suppurative, Moderate
		Necrosis	Moderate
	Bronchus, Epithelium	Regeneration	Mild
	[Inflammation TGLs = 3-4]		
* Lymph Node, Bronchial		Inflammation	Chronic Active, Moderate
* Nose	Olfactory Epi	Atrophy	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 728

TRT#: 8

SEX: Female

DAY ON TEST: 670

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61550

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Mild
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
	[Cyst TGLs = 4-8]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Angiectasis	Minimal
		Hematopoietic Cell Proliferation	Mild
	[Hematopoietic Cell Proliferation TGLs = 5-5]	Necrosis	Minimal
* Thymus		Inflammation	Chronic Active, Mild
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Marked
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Trachea Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 729

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61551

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
	[Hyperplasia TGLs = 1-11]		
* Heart	Valve	Inflammation	Chronic Active, Minimal
* Kidney		Infarct	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Marked
Lymph Node	Deep Cervical	Hyperplasia	Lymphoid, Moderate
	[Hyperplasia TGLs = 3-6]		
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
	[Hyperplasia TGLs = 2-8]		
* Nose	Turbinate	Atrophy	Moderate
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 729

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61551

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
[Cyst TGLs = 4-8]			
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 730

TRT#: 8

SEX: Female

DAY ON TEST: 267

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61552

ORGAN AND ACCOUNTABLE SITE STATUS

	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Salivary Glands		Inflammation	Chronic Active, Mild
* Spleen		Inflammation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
	Epithelium	Regeneration	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 731

TRT#: 8

SEX: Female

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61553

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

MISSING

* Clitoral Gland

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal * Lymph Node, Mesenteric

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Moderate
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	Cornea	Necrosis	Minimal
[Mineralization TGLs = 1-11]			
* Larynx	Squam Epithel	Hyperplasia	Marked
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Lung	Mediastinum	Inflammation	Suppurative, Mild
		Inflammation	Suppurative, Minimal
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Bronchial		Inflammation	Chronic Active, Minimal
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Moderate
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 731

TRT#: 8

SEX: Female

DAY ON TEST: 690

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61553

ORGAN AND ACCOUNTABLE SITE STATUS

Lamina Propria	Fibrosis	Minimal
	Foreign Body	
	Inflammation	Suppurative, Marked
Respirat Epi	Metaplasia	Squamous, Mild
Olfactory Epi	Metaplasia	Respiratory, Marked
Respirat Epi	Necrosis	Mild
Olfactory Epi	Necrosis	Mild
Mucosa	Regeneration	Mild
Peripheral Nerve	Degeneration	Mild
* Skin	Fibrosis	Mild
	Hyperplasia	Mild
* Spleen	Hematopoietic Cell Proliferation	Moderate
* Thymus	Ectopic Parathyroid Gland	Minimal
	Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate
	Submucosa	Fibrosis
		Inflammation
		Necrosis
	Epithelium	Regeneration
		Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation
 - Trachea Inflammation

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 732

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61554

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Clitoral Gland
* Esophagus	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Urinary Bladder	* Uterus	

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex	Zona Fascult	Hypertrophy	Focal, Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Brain		Infiltration Cellular	Lymphocyte, Minimal
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
Note: TGLS 6=NCL			
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Hepatocellular Adenoma	Multiple
[Hepatocellular Adenoma TGLs = 4-5]			
* Lung	Bronchus, Epithelium	Regeneration	Marked
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Minimal
[Hyperplasia TGLs = 1-8]			
* Nose		Adenocarcinoma	
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 732

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61554

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
	[Adenocarcinoma TGLs = 2-10]		
* Ovary		Cyst	
	[Cyst TGLs = 3-8]		
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 733

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61555

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Urinary Bladder			

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Eye	Cornea, Epithelium	Hyperplasia	Mild
	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
* Heart		Inflammation	Acute, Minimal
		Polyarteritis	Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Mild
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 733

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61555

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Olfactory Epi Mucosa	Necrosis Regeneration Cyst	Minimal Moderate
[Cyst TGLs = 1-8]			
* Trachea	Submucosa Carina, Submucosa	Fibrosis Inflammation Mineralization Necrosis	Mild Chronic Active, Minimal Mild Minimal
* Uterus	Epithelium Endometrium	Regeneration Hyperplasia	Moderate Cystic, Mild

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 734

TRT#: 8

SEX: Female

DAY ON TEST: 225

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61556

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Liver	* Lymph Node, Mediastinal	* Mammary Gland
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Thyroid Gland			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Bone Marrow	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric	* Pancreas
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Urinary Bladder

OBSERVATIONS

* Heart		Inflammation	Acute, Mild
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Mediastinum	Inflammation	Suppurative, Minimal
* Nose	Olfactory Epi	Atrophy	Moderate
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Ovary		Inflammation	Minimal
* Thymus		Inflammation	Chronic Active, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 734

TRT#: 8

SEX: Female

DAY ON TEST: 225

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61556

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea	Lumen	Exudate	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 735

TRT#: 8

SEX: Female

DAY ON TEST: 696

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61557

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Pituitary Gland
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INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Mild
	[Inflammation TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Moderate
* Liver		Tension Lipidosis	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 735

TRT#: 8

SEX: Female

DAY ON TEST: 696

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61557

ORGAN AND ACCOUNTABLE SITE STATUS

* Ovary	Septum	Perforation	
* Trachea	Mucosa	Regeneration	Mild
		Cyst	
	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
* Uterus	Epithelium	Regeneration	Mild
	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Nose Septum Perforation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 736

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61558

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Esophagus	* Gallbladder	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland

MISSING

* Clitoral Gland	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
		Lymphoma Malignant	
* Eye	Cornea	Inflammation	Acute, Minimal
	Cornea	Mineralization	Minimal
	[Mineralization TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Mild
* Liver		Lymphoma Malignant	
* Lung		Lymphoma Malignant	
	Bronchus, Epithelium	Regeneration	Mild
	Renal	Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 3-6]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 736

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61558

ORGAN AND ACCOUNTABLE SITE STATUS

Lamina Propria

Fibrosis

Mild

Inflammation

Suppurative, Moderate

Olfactory Epi

Metaplasia

Respiratory, Moderate

Respirat Epith

Metaplasia

Squamous, Mild

Respirat Epith

Necrosis

Mild

Turbinat

Necrosis

Minimal

Mucosa

Regeneration

Mild

* Ovary

Lymphoma Malignant

* Salivary Glands

Lymphoma Malignant

* Spleen

Lymphoma Malignant

[Lymphoma Malignant TGLs = 2-5]

* Thymus

Lymphoma Malignant

* Trachea

Submucosa

Fibrosis

Mild

Inflammation

Chronic Active, Minimal

Necrosis

Mild

Epithelium

Regeneration

Moderate

* Urinary Bladder

Lymphoma Malignant

* Uterus

Endometrium

Hyperplasia

Cystic, Moderate

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 737

TRT#: 8

SEX: Female

DAY ON TEST: 605

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61559

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	* Bone	* Brain	* Clitoral Gland
* Esophagus	* Eye	* Gallbladder	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mandibular

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal * Thymus

OBSERVATIONS

* Adrenal Cortex	Capsule	Hemangiosarcoma	Metastatic (Skeletal Muscle)
Blood Vessel		Hemangiosarcoma	Metastatic (Skeletal Muscle)
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Kidney		Nephropathy	Mild
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Minimal
	Respirat Epith	Regeneration	Minimal
* Liver		Hemangiosarcoma	Metastatic (Skeletal Muscle)
* Lung	Bronchus, Epithelium	Regeneration	Mild
Mesentery		Hemangiosarcoma	Metastatic (Skeletal Muscle)
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 737

TRT#: 8

SEX: Female

DAY ON TEST: 605

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61559

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Ovary	Periovarn Tiss	Hemangiosarcoma	Metastatic (Skeletal Muscle)
Skeletal Muscle		Hemangiosarcoma	
	[Hemangiosarcoma TGLs = 2-6]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Marked

PRIMARY CAUSE OF DEATH - Skeletal Muscle Hemangiosarcoma

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 738

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61560

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Gallbladder	* Parathyroid Gland
---------------	---------------------

INSUFFICIENT TISSUE

* Lymph Node, Mediastinal

OBSERVATIONS

* Bone		Fibro-Osseous Lesion	Mild
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Harderian Gland		Hyperplasia	Minimal
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Mandibular		Ectasia	Mild
		Hyperplasia	Lymphoid, Mild
	[Ectasia TGLs = 2-8]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 738

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61560

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Trachea	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 739

TRT#: 8

SEX: Female

DAY ON TEST: 347

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61561

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Islets, Pancreatic	* Kidney
* Liver	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Mediastinal

AUTO PRECLUDES DIAG.

* Gallbladder * Intestine Small, Jejunum

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Heart		Inflammation	Chronic Active, Mild
* Larynx	Squam Epithel	Hyperplasia	Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Mild
* Lung	Pleura	Inflammation	Suppurative, Mild
	Mediastinum	Inflammation	Suppurative, Moderate
	Bronchus, Epithelium	Regeneration	Mild
* Lymph Node, Bronchial		Inflammation	Chronic Active, Marked
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 739

TRT#: 8

SEX: Female

DAY ON TEST: 347

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61561

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Turbinat	Necrosis	Minimal
* Thymus		Inflammation	Chronic Active, Marked
* Trachea	Submucosa	Fibrosis	Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 740

TRT#: 8

SEX: Female

DAY ON TEST: 424

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61562

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Blood Vessel
- * Bone
- * Brain
- * Clitoral Gland
- * Esophagus
- * Eye
- * Gallbladder
- * Harderian Gland
- * Heart
- * Intestine Large, Cecum
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Duodenum
- * Intestine Small, Ileum
- * Intestine Small, Jejunum
- * Islets, Pancreatic
- * Kidney
- * Liver
- * Lymph Node, Bronchial
- * Lymph Node, Mediastinal
- * Lymph Node, Mesenteric
- * Mammary Gland
- * Ovary
- * Pancreas
- * Parathyroid Gland
- * Pituitary Gland
- * Salivary Glands
- * Skin
- * Stomach, Forestomach
- * Stomach, Glandular
- * Thyroid Gland
- * Urinary Bladder

OBSERVATIONS

- * Bone Marrow
 - Myeloid Cell Hyperplasia Moderate
- * Larynx
 - Squam Epithel Hyperplasia Moderate
 - Inflammation Chronic Active, Minimal
 - Respirat Epith Metaplasia Squamous, Moderate
 - Respirat Epith Necrosis Minimal
 - Respirat Epith Regeneration Minimal
 - Bronchus, Epithelium Regeneration Marked
 - Infiltration Cellular Plasma Cell, Mild
 - Turbinate Atrophy Mild
 - Olfactory Epi Atrophy Minimal
 - Lamina Propria Fibrosis Moderate
 - Inflammation Suppurative, Marked
 - Olfactory Epi Metaplasia Respiratory, Marked
 - Respirat Epith Metaplasia Squamous, Moderate
 - Glands, Sinus Metaplasia Respiratory, Minimal
 - Respirat Epith Necrosis Mild
 - Olfactory Epi Necrosis Minimal
 - Turbinate Necrosis Minimal
 - Mucosa Regeneration Mild
- * Spleen
 - Hematopoietic Cell Proliferation Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 740

TRT#: 8

SEX: Female

DAY ON TEST: 424

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61562

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus		Atrophy	Minimal
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 741

TRT#: 8

SEX: Female

DAY ON TEST: 585

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61563

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Heart	* Intestine Large, Colon	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Lymph Node, Mesenteric		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Minimal
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Eye	Cornea	Necrosis	Minimal
* Harderian Gland		Adenoma	
[Adenoma TGLs = 6-11]			
* Larynx	Lumen	Exudate	Moderate
		Inflammation	Chronic Active, Moderate
	Respirat Epith	Metaplasia	Squamous, Marked
* Liver		Hepatocellular Adenoma	
		Lymphoma Malignant	
[Hepatocellular Adenoma TGLs = 4-6]			
* Lung		Inflammation	Suppurative, Mild
	Mediastinum	Inflammation	Suppurative, Mild
	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Bronchial		Hematopoietic Cell Proliferation	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 741

TRT#: 8

SEX: Female

DAY ON TEST: 585

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61563

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
	[Cyst TGLs = 1-8]		
* Spleen		Lymphoma Malignant	
	[Lymphoma Malignant TGLs = 2,3-5+12]		
* Thymus		Atrophy	Mild
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Marked
		Necrosis	Marked

PRIMARY CAUSE OF DEATH - Trachea Necrosis

CONTRIBUTORY CAUSE OF DEATH - Trachea Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 742

TRT#: 8

SEX: Female

DAY ON TEST: 698

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61564

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Clitoral Gland	* Esophagus	* Harderian Gland	* Heart
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal

AUTO PRECLUDES DIAG.

* Eye	* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Stomach, Glandular

INSUFFICIENT TISSUE

* Intestine Large, Rectum * Lymph Node, Bronchial

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Brain		Infiltration Cellular	Lymphocyte, Minimal
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Moderate
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Marked
* Lymph Node, Mandibular		Ectasia	Mild
		Hyperplasia	Lymphoid, Mild
	[Ectasia TGLs = 1-8]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinat	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 742

TRT#: 8

SEX: Female

DAY ON TEST: 698

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61564

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Mild
	Mucosa	Regeneration	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Submucosa	Fibrosis	Mild
		Inflammation	Chronic Active, Marked
		Necrosis	Marked
* Uterus	Epithelium	Regeneration	Minimal
	Endometrium	Hyperplasia	Cystic, Mild
PRIMARY CAUSE OF DEATH	- Nose	Inflammation	

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 743

TRT#: 8

SEX: Female

DAY ON TEST: 320

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61565

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Eye	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Urinary Bladder	* Uterus		

MISSING

* Clitoral Gland	* Lymph Node, Bronchial
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Larynx	Squam Epithel	Hyperplasia	Mild
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Regeneration	Mild
Lymph Node	Deep Cervical	Infiltration Cellular	Plasma Cell, Moderate
[Infiltration Cellular TGLs = 1-6]			
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Moderate
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Suppurative, Marked
	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Olfactory Epi	Necrosis	Moderate

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 743

TRT#: 8

SEX: Female

DAY ON TEST: 320

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61565

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Septum	Perforation	
	Mucosa	Regeneration	Mild
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation
CONTRIBUTORY CAUSE OF DEATH - Nose Olfactory Epi Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 744

TRT#: 8

SEX: Female

DAY ON TEST: 710

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61566

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Harderian Gland	* Heart	* Intestine Large, Colon
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Urinary Bladder		

AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Mild
* Eye	Cornea, Epithelium	Hyperplasia	Minimal
	Cornea	Inflammation	Acute, Mild
	Cornea	Mineralization	Minimal
	Cornea, Epithelium	Ulcer	Minimal
	[Inflammation TGLs = 2-11]		
* Larynx	Squam Epithel	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Lung	Alveolus	Inflammation	Suppurative, Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 744

TRT#: 8

SEX: Female

DAY ON TEST: 710

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61566

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Thymus		Inflammation	Chronic Active, Minimal
* Thyroid Gland		Inflammation	Chronic Active, Minimal
* Trachea	Lumen	Exudate	Moderate
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Marked
	Epithelium	Necrosis	Marked
		Regeneration	Mild
[Inflammation TGLs = 1-12]			
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Trachea Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Trachea Submucosa Fibrosis
 - Trachea Necrosis

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 745

TRT#: 8

SEX: Female

DAY ON TEST: 596

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61567

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Bone | * Brain |
| * Clitoral Gland | * Esophagus | * Gallbladder | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic |
| * Lymph Node, Bronchial | * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Spleen | * Stomach, Forestomach |
| * Stomach, Glandular | * Thymus | * Thyroid Gland | * Urinary Bladder |
| * Uterus | | | |

MISSING

- * Lymph Node, Mediastinal

OBSERVATIONS

- | | | | |
|---|----------------------|----------------------------|--------------------------|
| Blood Vessel | | Inflammation | Minimal |
| Note: Thymus | | | |
| * Bone Marrow | Myeloid Cell | Hyperplasia | Moderate |
| * Eye | Cornea | Inflammation | Acute, Minimal |
| | Cornea | Mineralization | Mild |
| | Cornea | Necrosis | Minimal |
| [Necrosis TGLs = 1-11] | | | |
| * Kidney | | Nephropathy | Minimal |
| * Larynx | | Inflammation | Chronic Active, Moderate |
| | Respirat Epith | Metaplasia | Squamous, Marked |
| | Respirat Epith | Necrosis | Mild |
| * Liver | | Hepatodiaphragmatic Nodule | Mild |
| [Hepatodiaphragmatic Nodule TGLs = 3-6] | | | |
| * Lung | Artery, Mediastinum | Inflammation | Chronic Active, Marked |
| | Bronchus, Epithelium | Regeneration | Minimal |
| * Nose | Turbinate | Atrophy | Mild |
| | Olfactory Epi | Atrophy | Minimal |
| | Lamina Propria | Fibrosis | Minimal |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 745

TRT#: 8

SEX: Female

DAY ON TEST: 596

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61567

ORGAN AND ACCOUNTABLE SITE STATUS

		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Olfactory Epi	Necrosis	Minimal
	Mucosa	Regeneration	Mild
Skeletal Muscle		Degeneration	Mild
	[Degeneration TGLs = 2-12]		
* Trachea	Submucosa	Fibrosis	Marked
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation
 CONTRIBUTORY CAUSE OF DEATH - Larynx Inflammation
 - Trachea Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 746

TRT#: 8

SEX: Female

DAY ON TEST: 547

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61568

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Ileum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Urinary Bladder		

AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Jejunum
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INSUFFICIENT TISSUE

* Intestine Large, Rectum

OBSERVATIONS

* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Gallbladder		Inflammation	Minimal
* Harderian Gland		Adenoma	
	[Adenoma TGLs = 2-11]		
* Larynx		Inflammation	Chronic Active, Mild
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Minimal
	Respirat Epith	Regeneration	Minimal
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Nose	Olfactory Epi	Atrophy	Mild
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

2,3-Butanedione

CAS Number: 431-03-8

Date Report Requested: 04/15/2016

Time Report Requested: 10:26:12

First Dose M/F: 08/31/09 / 08/31/09

Lab: BNW

ANIMAL ID: 746

TRT#: 8

SEX: Female

DAY ON TEST: 547

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61568

ORGAN AND ACCOUNTABLE SITE STATUS

* Thymus	Mucosa	Regeneration	Minimal
* Thyroid Gland		Atrophy	Mild
* Trachea	Lumen	Inflammation	Chronic Active, Minimal
	Submucosa	Exudate	Moderate
		Fibrosis	Mild
	Carina, Submucosa	Inflammation	Chronic Active, Marked
		Mineralization	Mild
	Epithelium	Necrosis	Moderate
* Uterus		Regeneration	Marked
		Hemangioma	

[Hemangioma TGLs = 1-9]

PRIMARY CAUSE OF DEATH - Trachea Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 747

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61569

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Urinary Bladder			

MISSING

* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Mild
* Larynx	Squam Epithel	Hyperplasia	Moderate
		Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Marked
* Liver		Hepatocellular Adenoma	
	[Hepatocellular Adenoma TGLs = 3-6]		
* Lung	Bronchus, Epithelium	Regeneration	Moderate
* Lymph Node, Mandibular		Hyperplasia	Lymphoid, Mild
	[Hyperplasia TGLs = 2-8]		
* Nose	Olfactory Epi	Atrophy	Minimal
	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Moderate
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 747

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61569

ORGAN AND ACCOUNTABLE SITE STATUS

* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
* Uterus	Epithelium	Regeneration	Marked
	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 748

TRT#: 8

SEX: Female

DAY ON TEST: 403

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61570

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Gallbladder
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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INSUFFICIENT TISSUE

* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Bone Marrow	Myeloid Cell	Hyperplasia	Marked
* Eye	Cornea	Inflammation	Acute, Minimal
	Antr Chamber	Inflammation	Suppurative, Minimal
	Cornea, Epithelium	Ulcer	Mild
	[Ulcer TGLs = 1-11]		
* Larynx	Respirat Epith	Metaplasia	Squamous, Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Bronchus, Epithelium	Regeneration	Marked
* Nose	Turbinate	Atrophy	Mild
	Olfactory Epi	Atrophy	Minimal
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Marked
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Glands, Sinus	Metaplasia	Respiratory, Minimal
	Respirat Epith	Necrosis	Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 748

TRT#: 8

SEX: Female

DAY ON TEST: 403

DOSE: 50 ppm

DISP: Moribund Sacrifice

HISTO: 61570

ORGAN AND ACCOUNTABLE SITE STATUS

	Olfactory Epi	Necrosis	Mild
	Turbinate	Necrosis	Minimal
	Mucosa	Regeneration	Mild
* Ovary		Cyst	
* Spleen		Hematopoietic Cell Proliferation	Mild
* Trachea	Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
	Epithelium	Regeneration	Moderate

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 749

TRT#: 8

SEX: Female

DAY ON TEST: 600

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61571

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Urinary Bladder	* Uterus		

MISSING

* Intestine Small, Duodenum	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Gallbladder	* Intestine Small, Ileum	* Intestine Small, Jejunum
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INSUFFICIENT TISSUE

* Thymus

OBSERVATIONS

* Esophagus	Periesoph Tiss	Inflammation	Chronic Active, Minimal
* Eye	Cornea	Necrosis	Minimal
	[Necrosis TGLs = 1-11]		
* Larynx	Squam Epithel	Hyperplasia	Minimal
		Inflammation	Chronic Active, Marked
	Respirat Epith	Metaplasia	Squamous, Marked
	Respirat Epith	Necrosis	Mild
* Lung	Bronchus, Epithelium	Degeneration	Moderate
		Inflammation	Suppurative, Minimal
	Mediastinum	Inflammation	Suppurative, Mild
	Bronchus, Epithelium	Regeneration	Moderate
* Nose	Turbinate	Atrophy	Mild
	Lamina Propria	Fibrosis	Mild
		Inflammation	Suppurative, Mild

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
Time Report Requested: 10:26:12
First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 749

TRT#: 8

SEX: Female

DAY ON TEST: 600

DOSE: 50 ppm

DISP: Natural Death

HISTO: 61571

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Metaplasia	Squamous, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Marked
	Respirat Epith	Necrosis	Mild
	Mucosa	Regeneration	Mild
* Thyroid Gland		Inflammation	Chronic Active, Mild
* Trachea	Submucosa	Fibrosis	Moderate
	Carina, Submucosa	Fibrosis	Minimal
		Inflammation	Chronic Active, Marked
		Necrosis	Marked

PRIMARY CAUSE OF DEATH - Nose Inflammation

Experiment Number: 20725 - 04
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 2,3-Butanedione
 CAS Number: 431-03-8

Date Report Requested: 04/15/2016
 Time Report Requested: 10:26:12
 First Dose M/F: 08/31/09 / 08/31/09
 Lab: BNW

ANIMAL ID: 750

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61572

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Gallbladder	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mediastinal
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Urinary Bladder

MISSING

* Lymph Node, Mesenteric

INSUFFICIENT TISSUE

* Lymph Node, Bronchial

OBSERVATIONS

* Eye	Cornea	Inflammation	Acute, Minimal
[Inflammation TGLs = 1-11]			
* Larynx	Squam Epithel	Hyperplasia	Minimal
	Respirat Epith	Inflammation	Chronic Active, Minimal
	Respirat Epith	Metaplasia	Squamous, Mild
* Liver		Regeneration	Minimal
* Lung	Bronchus, Epithelium	Infiltration Cellular	Lymphocyte, Mild
* Lymph Node, Mandibular		Regeneration	Marked
* Nose	Turbinate	Hyperplasia	Lymphoid, Minimal
	Olfactory Epi	Atrophy	Mild
	Lamina Propria	Atrophy	Minimal
		Fibrosis	Moderate
		Inflammation	Suppurative, Moderate
	Olfactory Epi	Metaplasia	Respiratory, Moderate
	Respirat Epith	Metaplasia	Squamous, Mild
	Respirat Epith	Necrosis	Minimal

* PROTOCOL REQUIRED TISSUE

Experiment Number: 20725 - 04
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
2,3-Butanedione
CAS Number: 431-03-8

Date Report Requested: 04/15/2016
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First Dose M/F: 08/31/09 / 08/31/09
Lab: BNW

ANIMAL ID: 750

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 50 ppm

DISP: Terminal Sacrifice

HISTO: 61572

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen	Mucosa	Regeneration	Mild
* Trachea		Hyperplasia	Lymphoid, Marked
	Submucosa	Fibrosis	Moderate
		Inflammation	Chronic Active, Minimal
		Necrosis	Minimal
* Uterus	Epithelium	Regeneration	Moderate
	Endometrium	Hyperplasia	Cystic, Moderate

*** END OF REPORT ***