

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**C Number:** C55572

**Cage Range:** All

**Date Range:** All

**Reasons For Removal:** All

**Removal Date Range:** All

**Treatment Groups:** All

**Study Gender:** Male

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C01

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye		Cataract
Heart	Retina	Degeneration, Nos
Kidney	Myocardium Nos	Fibrosis
	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Tubular-Cell Adenoma
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		Follicular-Cell Adenoma
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C02

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

**OBSERVATIONS**

Eye	Retina	Cataract
	Sclera	Degeneration, Nos
Kidney	Papilla	Mineralization
		Mineralization
Liver		Nephropathy
	Bile Duct	Fibrosis, Cholangio
Lung		Hyperplasia, Nos
Pituitary gland	Anterior Pituitary	Bronchopneumonia, Nos
Preputial gland		Hemorrhage
Stomach	Fundus	Adenoma, Nos
Testis		Degeneration, Cystic
		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C03

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Tubular-Cell Adenocarcinoma
Liver	Bile Duct	Hyperplasia, Nos
Nasal cavity		Inflammation, Suppurative
Pancreas	Acinus	Atrophy, Nos
Preputial gland		Adenoma, Nos
Stomach	Forestomach	Ulcer, Nos
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C04

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye		Cataract
Heart	Retina	Degeneration, Nos
Kidney	Myocardium Nos	Fibrosis
	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
Liver		Nephropathy
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung		Inflammation, Interstitial
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
Pancreas	Acinus	Hyperplasia, Nos
	Islets	Islet-Cell Adenoma
Pituitary gland	Anterior Pituitary	Angiectasis
Skin		Keratoacanthoma
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		Cyst, Ultimobranchial
Unspecified		Fibroma
		Hematoma, Nos
	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C05

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Eye	Retina	Cataract
	Sclera	Degeneration, Nos
Heart	Myocardium Nos	Mineralization
Kidney	Papilla	Fibrosis
		Hyperplasia, Epithelial
	Papilla	Hyperplasia, Tubular Cell
		Mineralization
Liver		Nephropathy
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pancreas	Acinus	Hyperplasia, Nos
Pituitary gland	Anterior Pituitary	Hyperplasia, Focal
Preputial gland		Inflammation, Chronic
Prostate		Inflammation, Chronic
Testis		Interstitial-Cell Tumor

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C06

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Pancreas	Acinus	Atrophy, Nos
Stomach	Fundus	Degeneration, Cystic
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C07

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Cataract
	Sclera	Degeneration, Nos
Heart	Myocardium Nos	Mineralization
Kidney	Papilla	Fibrosis
	Papilla	Hyperplasia, Epithelial
		Mineralization
Liver	Centrilobular	Nephropathy
		Atrophy, Nos
		Cyst, Hemorrhagic
	Bile Duct	Hyperplasia, Nos
Lung		Congestion, Nos
Skin		Squamous Cell Carcinoma
Testis		Interstitial-Cell Tumor
Zymbal gland		Carcinoma, Nos

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C08

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Eye		Cataract
	Retina	Degeneration, Nos
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
		Hyperplasia, Tubular Cell
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
Pancreas	Acinus	Hyperplasia, Nos
	Islets	Islet-Cell Adenoma
Preputial gland		Inflammation, Chronic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C09

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland	Medulla	Hyperplasia, Focal
Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Intestine Small	Mesentery Nos	Fibrosis
Kidney	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
Liver		Cytoplasmic Change, Nos
	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
Mammary gland		Inflammation, Granulomatous
Nasal cavity	Respiratory Region	Hyperplasia, Epithelial
		Inflammation, Suppurative
	Respiratory Region	Metaplasia, Squamous
	Olfactory Region	Regeneration, Nos
	Respiratory Region	Regeneration, Nos
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Salivary gland		Metaplasia, Squamous
Stomach	Forestomach	Ulcer, Nos
Testis		Hyperplasia, Interstitial Cell
		Hypospermatogenesis
		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C10

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
		Cytoplasmic Change, Nos
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Cyst, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C11

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Brain		Astrocytoma
Eye		Cataract
	Retina	Degeneration, Nos
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Nasal cavity		Inflammation, Chronic
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
		Interstitial-Cell Tumor
Thyroid	Follicle	Hyperplasia, Cystic

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C12

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Angiectasis
		Pheochromocytoma
Eye		Cataract
	Retina	Degeneration, Nos
		Hemorrhage
Heart	Myocardium Nos	Fibrosis
	Atrium	Thrombosis, Nos
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
Mammary gland		Fibroadenoma
Pituitary gland	Anterior Pituitary	Angiectasis
Prostate		Hyperplasia, Epithelial
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C13

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland

Eye

Heart

Kidney

Liver

Nasal cavity

Preputial gland

Seminal vesicle

Stomach

Testis

Retina

Myocardium Nos

Papilla

Papilla

Bile Duct

Fundus

Pheochromocytoma

Cataract

Degeneration, Nos

Fibrosis

Hyperplasia, Epithelial

Mineralization

Nephropathy

Tubular-Cell Adenoma

Cytoplasmic Change, Basophilic

Hyperplasia, Nos

Hyperkeratosis

Inflammation, Suppurative

Inflammation, Chronic

Atrophy, Nos

Degeneration, Cystic

Interstitial-Cell Tumor

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C14

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Angiectasis
Preputial gland		Inflammation, Chronic
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C15

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland	Medulla	Hyperplasia, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
Liver		Cytoplasmic Change, Basophilic
		Cytoplasmic Change, Nos
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pancreas	Islets	Islet-Cell Adenoma
Preputial gland		Inflammation, Chronic
Prostate		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 1\_C16

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

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**OBSERVATIONS**

Kidney

Papilla

Mineralization

Liver

Nephropathy

Lung

Fibrosis, Cholangio

Congestion, Nos

Testis

Foreign Material, Nos

Unspecified

Abdominal Cavity

Hyperplasia, Interstitial Cell

Necrosis, Fat

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C17

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Eye	Retina	Cataract
	Sclera	Degeneration, Nos
Kidney	Papilla	Mineralization
	Papilla	Hyperplasia, Epithelial
		Mineralization
		Nephropathy
Liver	Bile Duct	Tubular-Cell Adenocarcinoma
Lung	Alveoli	Hyperplasia, Nos
		Histiocytosis
		Inflammation, Interstitial
Lymph node	Mediastinal Lymph Node	Hemosiderosis
Stomach	Forestomach	Hyperplasia, Epithelial
	Forestomach	Inflammation, Chronic
Testis		Interstitial-Cell Tumor
		Mesothelioma, Malignant
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Mesothelioma, Metastatic

**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C18

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pancreas	Islets	Islet-Cell Adenoma
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		Hyperplasia, C Cell
Unspecified	Abdominal Cavity	Necrosis, Fat

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C19

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Angiectasis
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
		Inflammation, Interstitial
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
Pancreas	Acinus	Hyperplasia, Nos
Salivary gland		Inflammation, Chronic
		Metaplasia, Squamous
Stomach	Fundus	Degeneration, Cystic
	Forestomach	Hyperplasia, Nos
	Forestomach	Inflammation, Chronic
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell
Urinary bladder		Inflammation, Chronic

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C20

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye		Cataract
	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Tubular-Cell Adenoma
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lymph node	Mediastinal Lymph Node	Hemorrhage
Nasal cavity		Hemorrhage
Pituitary gland	Anterior Pituitary	Cyst, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C21

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Cataract
		Degeneration, Nos
Heart	Myocardium Nos	Hemorrhage
Kidney	Papilla	Fibrosis
		Hyperplasia, Epithelial
	Papilla	Hyperplasia, Tubular Cell
		Mineralization
Liver		Nephropathy
		Angiectasis
		Cytoplasmic Change, Basophilic
Pancreas	Bile Duct	Hyperplasia, Nos
	Acinus	Hyperplasia, Nos
		Polyangiitis
Prostate		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
		Mesothelioma, Malignant
Thymus		Hyperplasia, Epithelial

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C22

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Eye		Cataract
	Retina	Degeneration, Nos
		Hemorrhage
Heart	Myocardium Nos	Fibrosis
	Atrium	Thrombosis, Nos
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lymph node	Mediastinal Lymph Node	Hemorrhage
Mammary gland		Fibroadenoma
Nasal cavity		Inflammation, Suppurative
Preputial gland		Adenoma, Nos
Skin		Squamous Cell Papilloma
Spleen		Fibrosis, Focal
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell
Urinary bladder		Inflammation, Chronic

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C23

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye		Cataract
	Retina	Degeneration, Nos
		Hemorrhage
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Preputial gland		Inflammation, Chronic
Prostate		Hyperplasia, Epithelial
		Inflammation, Chronic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C24

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Eye	Retina	Cataract
		Degeneration, Nos
		Hemorrhage
Heart	Myocardium Nos	Fibrosis
	Atrium	Thrombosis, Nos
Kidney		Hemorrhage
	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
	Mesenteric Lymph Node	Hemorrhage
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Cyst, Nos
Prostate		Inflammation, Chronic
Spleen		Fibrosis, Diffuse
Testis		Interstitial-Cell Tumor
Unspecified	Mediastinum Nos	Inflammation, Chronic

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C25

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Blood vessel

Pulmonary Artery Nos

Mineralization

Heart

Myocardium Nos

Fibrosis

Kidney

Papilla

Mineralization

Nephropathy

Liver

Bile Duct

Hyperplasia, Nos

Lung

Alveoli

Histiocytosis

Lymph node

Mediastinal Lymph Node

Hemorrhage

Pancreas

Acinar-Cell Adenoma

Spleen

Angiectasis

Thrombosis, Nos

Testis

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C26

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Brain	Stem	Displacement, Nos Hemorrhage
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla Papilla	Hyperplasia, Epithelial Mineralization Nephropathy
Liver	Bile Duct	Hyperplasia, Nos Metamorphosis, Fatty
Lung		Alveolar/Bronchiolar Carcinoma
Pancreas	Alveoli	Histiocytosis
Pituitary gland	Islets	Islet-Cell Adenoma
Preputial gland	Anterior Pituitary	Adenoma, Nos
Prostate		Inflammation, Chronic
Skin		Inflammation, Chronic
Stomach	Fundus	Keratoacanthoma
	Forestomach	Degeneration, Cystic
	Forestomach	Hyperplasia, Epithelial
Testis		Inflammation, Chronic
Thymus		Interstitial-Cell Tumor Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C27

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Brain		Gliosis
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
		Hyperplasia, Tubular Cell
	Papilla	Mineralization
Liver		Nephropathy
		Hyperplasia, Focal
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pancreas	Islets	Islet-Cell Adenoma
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		C-Cell Adenoma
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C28

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Heart	Atrium	Thrombosis, Nos
Kidney	Papilla	Hyperplasia, Epithelial Hyperplasia, Tubular Cell
	Papilla	Mineralization Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Inflammation, Interstitial
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
Nasal cavity		Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Salivary gland		Metaplasia, Squamous
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Thyroid		C-Cell Adenoma Hyperplasia, C Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C29

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver		Fibrosis, Cholangio
	Bile Duct	Hyperplasia, Nos
Lung		Inflammation, Granulomatous Focal
Pituitary gland	Anterior Pituitary	Cyst, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
		Hypospermatogenesis
		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C30

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Retina Sclera	Cataract Degeneration, Nos Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla Papilla	Hyperplasia, Epithelial Mineralization Nephropathy
Liver	Bile Duct	Cytoplasmic Change, Basophilic Hyperplasia, Nos
Lymph node	Mediastinal Lymph Node Mediastinal Lymph Node	Degeneration, Cystic Hemorrhage
Nasal cavity		Inflammation, Suppurative
Preputial gland		Inflammation, Chronic
Prostate		Inflammation, Chronic
Skin		Basal-Cell Tumor
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 1\_C31

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Pheochromocytoma

Eye

Sclera

Pheochromocytoma, Malignant

Kidney

Mineralization

Liver

Nephropathy

Stomach

Bile Duct

Fibrosis, Cholangio

Testis

Fundus

Hyperplasia, Nos

Thymus

Degeneration, Cystic

Interstitial-Cell Tumor

Hyperplasia, Epithelial

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C32

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Moribund Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Brain		Hemorrhage
Kidney	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
Liver	Bile Duct	Hyperplasia, Nos
		Neoplastic Nodule
Prostate		Inflammation, Suppurative
Spinal cord		Hemorrhage
Stomach	Fundus	Degeneration, Cystic
	Fundus	Erosion
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell
Urinary bladder		Inflammation, Chronic

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C33

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial Hyperplasia, Tubular Cell
	Papilla	Mineralization Nephropathy
Liver		Hepatocellular Carcinoma
	Bile Duct	Hyperplasia, Nos
Lung		Inflammation, Interstitial
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Skin		Squamous Cell Carcinoma
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C34

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
		Tubular-Cell Adenoma
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Prostate		Inflammation, Chronic
Stomach	Glandular Stomach	Fibrosis
Testis		Interstitial-Cell Tumor
Thyroid		Hyperplasia, C Cell
Unspecified		Fibroma
	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C35

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

**OBSERVATIONS**

Bone	Femur	Fibrous Osteodystrophy
Heart	Myocardium Nos	Fibrosis
Intestine Large	Colon	Inflammation, Acute
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Tubular-Cell Adenoma
Lung		Inflammation, Acute
Parathyroid gland		Hyperplasia, Nos
Spleen		Hemosiderosis
Stomach	Forestomach	Hyperplasia, Nos
	Fundus	Inflammation, Acute
	Fundus	Mineralization
Testis		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C36

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland  
Eye  
Heart  
Intestine Small  
Kidney  
  
Liver  
Lymph node  
Pituitary gland  
Preputial gland  
Prostate  
Stomach  
Testis

Sclera  
Myocardium Nos  
Mesentery Nos  
Papilla  
Papilla  
  
Bile Duct  
Mediastinal Lymph Node  
Anterior Pituitary  
  
Fundus

Pheochromocytoma  
Mineralization  
Fibrosis  
Mesothelioma, Metastatic  
Hyperplasia, Epithelial  
Mineralization  
Nephropathy  
Hyperplasia, Nos  
Degeneration, Cystic  
Hyperplasia, Focal  
Inflammation, Chronic  
Hyperplasia, Epithelial  
Degeneration, Cystic  
Interstitial-Cell Tumor  
Mesothelioma, Malignant

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C37

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Degeneration, Nos
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Abdominal Wall Nos	Hemangioma
	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C38

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Retina

Sclera

Myocardium Nos

Papilla

Papilla

Heart

Kidney

Liver

Lung

Pituitary gland

Prostate

Testis

Bile Duct

Alveoli

Anterior Pituitary

Pheochromocytoma

Cataract

Degeneration, Nos

Hemorrhage

Mineralization

Fibrosis

Hyperplasia, Epithelial

Mineralization

Nephropathy

Hyperplasia, Nos

Histiocytosis

Adenoma, Nos

Inflammation, Chronic

Hyperplasia, Interstitial Cell

Hypospermatogenesis

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C39

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Brain		Granular-Cell Tumor, Nos
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pigmentation, Nos
Liver	Bile Duct	Hyperplasia, Nos
Lung		Hemorrhage
	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemosiderosis
Pituitary gland	Anterior Pituitary	Hyperplasia, Focal
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
		Mesothelioma, Malignant
Thyroid		C-Cell Carcinoma
Unspecified	Multiple Organs Nos	Mesothelioma, Metastatic

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C40

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Pheochromocytoma
Brain	Stem	Displacement, Nos
Eye		Cataract
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pyelonephritis, Nos
		Tubular-Cell Adenocarcinoma
Liver		Angiectasis
	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
		Inflammation, Granulomatous Focal
Lymph node	Mediastinal Lymph Node	Hemorrhage
	Mesenteric Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Prostate		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
		Hypospermatogenesis
		Interstitial-Cell Tumor
Thyroid		Hyperplasia, C Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C41

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Nasal cavity

Pituitary gland

Salivary gland

Testis

Thyroid

Unspecified

Retina

Sclera

Papilla

Papilla

Bile Duct

Anterior Pituitary

Multiple Organs Nos

Thoracic Cavity Nos

Lipoidosis

Degeneration, Nos

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Hyperplasia, Nos

Inflammation, Suppurative

Cyst, Nos

Metaplasia, Squamous

Interstitial-Cell Tumor

Hyperplasia, C Cell

Leukemia, Mononuclear Cell

Mesothelioma, Malignant

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C42

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
		Hyperplasia, Tubular Cell
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Nasal cavity		Hyperkeratosis
		Inflammation, Suppurative
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Thyroid		C-Cell Carcinoma
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C43

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
	Alveoli	Histiocytosis
Mammary gland		Fibroadenoma
Nasal cavity		Inflammation, Suppurative
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 1\_C44

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Spleen		Fibrosis, Diffuse
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C45

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Lipoidosis Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla Papilla	Hyperplasia, Epithelial Mineralization Nephropathy Pyelonephritis, Nos
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
	Alveoli	Histiocytosis
Prostate		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell
Zymbal gland		Carcinoma, Nos

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 1\_C46

TRT#: 1

SEX: Male

DAY ON TEST:

DOSE: 150.0 MG/KG

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Angiectasis
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Tubular-Cell Adenoma
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Dilatation, Ducts
		Hyperplasia, Nos
		Inflammation, Chronic
Prostate		Hyperplasia, Epithelial
Spleen		Hyperplasia, Lymphoid
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		Hyperplasia, C Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C47

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Pheochromocytoma

Blood vessel

Pulmonary Artery Nos

Pheochromocytoma, Malignant

Eye

Mineralization

Retina

Cataract

Sclera

Degeneration, Nos

Kidney

Papilla

Mineralization

Papilla

Hyperplasia, Epithelial

Mineralization

Nephropathy

Liver

Bile Duct

Tubular-Cell Adenoma

Lymph node

Mandibular Lymph Node

Hyperplasia, Nos

Spleen

Degeneration, Cystic

Testis

Fibrosis, Diffuse

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C48

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mesenteric Lymph Node	Degeneration, Cystic
Parathyroid gland		Hyperplasia, Nos
		Hypertrophy, Focal
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified		Fibroma
	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 1\_C49

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Eye	Retina	Degeneration, Nos
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Preputial gland		Adenoma, Nos
Prostate		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 1\_C50

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 150.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Retina Sclera	Degeneration, Nos Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla Papilla	Hyperplasia, Epithelial Mineralization Nephropathy Tubular-Cell Adenoma
Liver	Bile Duct	Angiectasis Hyperplasia, Nos Necrosis, Coagulative
Lymph node	Mediastinal Lymph Node Mesenteric Lymph Node	Degeneration, Cystic Degeneration, Cystic
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 2\_C01

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Heart	Myocardium Nos	Fibrosis
	Myocardium Nos	Hemorrhage
Kidney		Nephropathy
Liver		Fibrosis, Cholangio
	Bile Duct	Hyperplasia, Nos
Lung		Congestion, Nos
		Edema, Nos
Lymph node	Mediastinal Lymph Node	Hemorrhage
Testis		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C02

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Pheochromocytoma

Eye

Sclera

Mineralization

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Nephropathy

Liver

Bile Duct

Tubular-Cell Adenoma

Testis

Hyperplasia, Nos

Unspecified

Abdominal Cavity

Interstitial-Cell Tumor

Necrosis, Fat

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C03

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Sclera

Papilla

Papilla

Liver

Testis

Unspecified

Bile Duct

Multiple Organs Nos

Pheochromocytoma

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Hyperplasia, Nos

Interstitial-Cell Tumor

Leukemia, Mononuclear Cell

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C04

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Lung

Lymph node

Pituitary gland

Testis

Thymus

Unspecified

Medulla

Retina

Sclera

Papilla

Papilla

Bile Duct

Mediastinal Lymph Node

Anterior Pituitary

Angiectasis

Hyperplasia, Focal

Degeneration, Nos

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Hyperplasia, Nos

Alveolar/Bronchiolar Carcinoma

Hemorrhage

Adenoma, Nos

Interstitial-Cell Tumor

Mesothelioma, Malignant

Cyst, Nos

Fibroma

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 2\_C05

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland  
Kidney

Medulla

Hyperplasia, Focal  
Hemorrhage

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Nephropathy

Liver

Tubular-Cell Adenocarcinoma

Cytoplasmic Change, Basophilic

Bile Duct

Hyperplasia, Nos

Mammary gland

Fibroadenoma

Testis

Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C06

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Eye

Sclera

Mineralization

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Liver

Nephropathy

Cytoplasmic Change, Basophilic

Bile Duct

Hyperplasia, Nos

Pituitary gland

Anterior Pituitary

Adenoma, Nos

Testis

Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C07

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Sclera

Papilla

Papilla

Liver

Bile Duct

Testis

Tunica Vaginalis

Unspecified

Pheochromocytoma

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Cytoplasmic Change, Basophilic

Hyperplasia, Nos

Hyperplasia, Mesothelial

Interstitial-Cell Tumor

Lipoma

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C08

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Kidney

Papilla

Papilla

Liver

Bile Duct

Lung

Testis

Pheochromocytoma

Hyperplasia, Epithelial

Mineralization

Nephropathy

Cytoplasmic Change, Basophilic

Hyperplasia, Nos

Squamous Cell Carcinoma

Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C09

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Testis		Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C10

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Brain		Hemorrhage
Kidney		Nephropathy
Liver		Fibrosis, Cholangio
	Bile Duct	Hyperplasia, Nos
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C11

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Hyperplasia, Tubular Cell

Mineralization

Liver

Nephropathy

Cytoplasmic Change, Basophilic

Bile Duct

Hyperplasia, Nos

Testis

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C12

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
		Cytoplasmic Change, Nos
	Bile Duct	Hyperplasia, Nos
Testis		Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C13

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Eye

Sclera

Mineralization

Kidney

Papilla

Mineralization

Liver

Nephropathy

Cytoplasmic Change, Basophilic

Bile Duct

Hyperplasia, Nos

Mammary gland

Galactocele

Skin

Keratoacanthoma

Testis

Interstitial-Cell Tumor

Unspecified

Multiple Organs Nos

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C14

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Testis

Retina

Sclera

Papilla

Papilla

Bile Duct

Pheochromocytoma

Cataract

Degeneration, Nos

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Hyperplasia, Nos

Interstitial-Cell Tumor

Mesothelioma, Malignant

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C15

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Kidney

Liver

Lymph node

Pancreas

Preputial gland

Spleen

Testis

Papilla

Centrilobular

Islets

Pheochromocytoma

Mineralization

Nephropathy

Necrosis, Nos

Neoplastic Nodule

Degeneration, Cystic

Hyperplasia, Nos

Adenoma, Nos

Fibroma

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C16

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Skin		Cyst, Epidermal Inclusion
Testis		Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C17

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Testis

Retina

Papilla

Bile Duct

Pheochromocytoma

Cataract

Degeneration, Nos

Mineralization

Nephropathy

Hyperplasia, Nos

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C18

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Testis		Interstitial-Cell Tumor
Unspecified		Fibroma
	Abdominal Cavity	Necrosis, Fat

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C19

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Retina	Degeneration, Nos
	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
		Hyperplasia, Tubular Cell
	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Testis		Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C20

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Moribund Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Blood vessel

Pulmonary Artery Nos

Mineralization

Brain

Meninges

Hemorrhage

Kidney

Papilla

Mineralization

Nephropathy

Pigmentation, Nos

Liver

Bile Duct

Hyperplasia, Nos

Lymph node

Mediastinal Lymph Node

Hemosiderosis

Testis

Hemosiderosis

Interstitial-Cell Tumor

Mesothelioma, Malignant

Unspecified

Multiple Organs Nos

Mesothelioma, Metastatic

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C21

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Moribund Sacrifice

**HISTO:**

**OBSERVATIONS**

Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
		Pigmentation, Nos
Liver		Fibrosis, Cholangio
	Bile Duct	Hyperplasia, Nos
	Centrilobular	Metamorphosis, Fatty
Nasal cavity		Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Cyst, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell
	Abdominal Cavity	Necrosis, Fat

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C22

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Blood vessel

Kidney

Pulmonary Artery Nos

Papilla

Papilla

Pheochromocytoma

Mineralization

Hyperplasia, Epithelial

Mineralization

Pigmentation, Nos

Tubular-Cell Adenocarcinoma

Liver

Bile Duct

Hyperplasia, Nos

Spleen

Centrilobular

Necrosis, Nos

Testis

Hyperplasia, Lymphoid

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C23

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Kidney

Papilla

Papilla

Pheochromocytoma

Hyperplasia, Epithelial

Mineralization

Nephropathy

Liver

Testis

Unspecified

Bile Duct

Multiple Organs Nos

Hyperplasia, Nos

Interstitial-Cell Tumor

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C24

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Kidney

Papilla

Inflammation, Suppurative

Mineralization

Necrosis, Nos

Liver

Bile Duct

Hyperplasia, Nos

Testis

Interstitial-Cell Tumor

Unspecified

Chordoma

Abdominal Cavity

Necrosis, Fat

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C25

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Kidney

Papilla

Papilla

Liver

Bile Duct

Centrilobular

Lung

Testis

Pheochromocytoma, Malignant

Cyst, Nos

Hyperplasia, Epithelial

Mineralization

Nephropathy

Tubular-Cell Adenoma

Hyperplasia, Nos

Necrosis, Nos

Congestion, Nos

Interstitial-Cell Tumor

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C27

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Heart

Myocardium Nos

Fibrosis

Liver

Bile Duct

Hyperplasia, Nos

Lung

Congestion, Nos

Pituitary gland

Anterior Pituitary

Adenoma, Nos

Testis

Hyperplasia, Interstitial Cell

Thymus

Interstitial-Cell Tumor

Hyperplasia, Epithelial

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C28

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Moribund Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Heart

Myocardium Nos

Inflammation, Chronic

Kidney

Nephropathy

Thymus

Lymphocytosis

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C29

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Kidney	Papilla Papilla	Hyperplasia, Epithelial Mineralization Nephropathy Pigmentation, Nos
Liver	Bile Duct	Hyperplasia, Nos
Spleen	Follicles	Atrophy, Nos
Testis		Hypospermatogenesis Interstitial-Cell Tumor Mesothelioma, Malignant
Unspecified	Multiple Organs Nos	Mesothelioma, Metastatic

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C30

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Mammary gland

Pituitary gland

Prostate

Testis

Retina

Sclera

Papilla

Papilla

Bile Duct

Anterior Pituitary

Pheochromocytoma

Cataract

Degeneration, Nos

Mineralization

Cyst, Nos

Hyperplasia, Epithelial

Hyperplasia, Tubular Cell

Mineralization

Nephropathy

Pyelonephritis, Nos

Angiectasis

Hyperplasia, Nos

Adenoma, Nos

Adenoma, Nos

Abscess, Nos

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C31

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Tubular-Cell Adenocarcinoma
		Cytoplasmic Change, Basophilic
		Cytoplasmic Change, Ground-Glass
	Bile Duct	Hyperplasia, Nos
Lung		Alveolar/Bronchiolar Adenoma
Skeletal muscle		Hemorrhage
Testis		Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C32

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Lung

Congestion, Nos

Pancreas

Edema, Nos

Thymus

Inflammation, Nos

Depletion, Lymphoid

Hemorrhage

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C33

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Moribund Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Liver

Mammary gland

Stomach

Testis

Thymus

Unspecified

Sclera

Papilla

Bile Duct

Fundus

Multiple Organs Nos

Pheochromocytoma

Mineralization

Mineralization

Nephropathy

Hyperplasia, Nos

Fibroadenoma

Degeneration, Cystic

Hyperplasia, Interstitial Cell

Hypospermatogenesis

Interstitial-Cell Tumor

Hyperplasia, Epithelial

Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C34

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Nephropathy

Seminal vesicle

Atrophy, Nos

Testis

Interstitial-Cell Tumor

Mesothelioma, Malignant

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C35

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Necrosis, Nos

Kidney

Papilla

Pheochromocytoma

Papilla

Hyperplasia, Epithelial

Liver

Bile Duct

Mineralization

Centrilobular

Nephropathy

Hyperplasia, Nos

Testis

Necrosis, Nos

Unspecified

Multiple Organs Nos

Neoplastic Nodule

Interstitial-Cell Tumor

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C36

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Kidney

Liver

Stomach

Testis

Unspecified

Papilla

Bile Duct

Fundus

Pheochromocytoma, Malignant

Mineralization

Nephropathy

Hyperplasia, Nos

Degeneration, Cystic

Hypospermatogenesis

Interstitial-Cell Tumor

Mineralization

Fibrosarcoma

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C37

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Dosing Accident

**HISTO:**

**OBSERVATIONS**

Esophagus		Inflammation, Acute
Kidney	Papilla	Mineralization Nephropathy
Liver	Bile Duct	Hyperplasia, Nos Congestion, Nos Edema, Nos
Lung		
Lymph node	Mediastinal Lymph Node	Hemorrhage
Nasal cavity		Foreign Material, Nos Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Cyst, Nos
Stomach	Fundus	Degeneration, Cystic Interstitial-Cell Tumor
Testis		Hemorrhage
Thymus		
Thyroid		Inflammation, Acute

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C38

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Tubular-Cell Adenoma
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lymph node	Mandibular Lymph Node	Hyperplasia, Lymphoid
Testis		Interstitial-Cell Tumor
Zymbal gland		Carcinoma, Nos

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C39

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal  
Pheochromocytoma, Malignant

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Nephropathy

Testis

Tubular-Cell Adenocarcinoma

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C40

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Pheochromocytoma

Eye

Sclera

Pheochromocytoma, Malignant

Kidney

Papilla

Mineralization

Papilla

Hyperplasia, Epithelial

Liver

Bile Duct

Mineralization

Testis

Nephropathy

Hyperplasia, Nos

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C41

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Cortex Nos

Hyperplasia, Focal

Medulla

Hyperplasia, Focal

Kidney

Papilla

Hyperplasia, Epithelial

Hyperplasia, Tubular Cell

Papilla

Mineralization

Liver

Bile Duct

Nephropathy

Testis

Hyperplasia, Nos

Unspecified

Multiple Organs Nos

Interstitial-Cell Tumor

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C42

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Cortex Nos

Angiectasis

Hyperplasia, Focal

Pheochromocytoma

Eye

Sclera

Mineralization

Kidney

Papilla

Hyperplasia, Epithelial

Papilla

Mineralization

Nephropathy

Liver

Bile Duct

Hyperplasia, Nos

Pancreas

Acinar-Cell Adenoma

Islets

Islet-Cell Adenoma

Pituitary gland

Anterior Pituitary

Adenoma, Nos

Testis

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C43

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland  
Kidney

Medulla  
Papilla  
Papilla

Hyperplasia, Focal  
Hyperplasia, Epithelial  
Mineralization  
Nephropathy  
Hyperplasia, Nos  
Adenoma, Nos  
Adenoma, Nos  
Hyperplasia, Epithelial  
Interstitial-Cell Tumor

Liver  
Pituitary gland  
Preputial gland  
Prostate  
Testis

Bile Duct  
Anterior Pituitary

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C44

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Lipoidosis

Eye

Retina

Pheochromocytoma

Sclera

Degeneration, Nos

Kidney

Papilla

Mineralization

Papilla

Hyperplasia, Epithelial

Liver

Bile Duct

Mineralization

Testis

Nephropathy

Hyperplasia, Nos

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C45

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Kidney

Papilla

Papilla

Pheochromocytoma

Hyperplasia, Epithelial

Mineralization

Nephropathy

Liver

Cytoplasmic Change, Basophilic

Bile Duct

Hyperplasia, Nos

Preputial gland

Adenoma, Nos

Testis

Interstitial-Cell Tumor

Unspecified

Multiple Organs Nos

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C46

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Eye	Retina	Degeneration, Nos
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
		Pigmentation, Nos
Liver	Bile Duct	Hyperplasia, Nos
	Centrilobular	Metamorphosis, Fatty
Lung		Epithelialization
Stomach	Glandular Stomach	Erosion
	Glandular Stomach	Fibrosis
Testis		Interstitial-Cell Tumor
		Mesothelioma, Malignant
Unspecified	Multiple Organs Nos	Mesothelioma, Metastatic

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C47

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Sclera

Papilla

Papilla

Pheochromocytoma

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Tubular-Cell Adenoma

Liver

Mammary gland

Testis

Bile Duct

Hyperplasia, Nos

Adenocarcinoma, Nos

Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C48

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Hyperplasia, Epithelial
	Papilla	Mineralization
		Nephropathy
Liver		Inflammation, Multifocal
Testis		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 2\_C49

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland  
Kidney

Medulla  
Papilla  
Papilla

Hyperplasia, Focal  
Hyperplasia, Epithelial  
Mineralization  
Nephropathy

Liver

Bile Duct  
Anterior Pituitary

Cytoplasmic Change, Basophilic  
Hyperplasia, Nos

Pituitary gland  
Preputial gland

Angiectasis  
Dilatation, Ducts

Testis  
Unspecified

Interstitial-Cell Tumor  
Fibrosarcoma

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 2\_C50

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 075.0 MG/KG

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Eye

Kidney

Sclera

Papilla

Papilla

Liver

Bile Duct

Preputial gland

Testis

Unspecified

Abdominal Cavity

Pheochromocytoma

Mineralization

Hyperplasia, Epithelial

Mineralization

Nephropathy

Cytoplasmic Change, Basophilic

Hyperplasia, Nos

Adenoma, Nos

Interstitial-Cell Tumor

Necrosis, Fat

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C01

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Eye	Sclera	Mineralization
Kidney	Papilla	Mineralization
		Nephropathy
Larynx		Lymphocytic Inflammatory Infiltrate
Liver	Bile Duct	Hyperplasia, Nos
Lung		Hemorrhage
	Alveoli	Histiocytosis
		Inflammation, Interstitial
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
Nasal cavity		Hemorrhage
Pituitary gland	Anterior Pituitary	Hemorrhage
Preputial gland		Adenoma, Nos
Testis		Hyperplasia, Interstitial Cell
		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C02

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Heart

Myocardium Nos

Inflammation, Chronic

Lung

Congestion, Nos

Edema, Nos

Hemorrhage

Alveoli

Histiocytosis

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C03

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Angiectasis
	Bile Duct	Cytoplasmic Change, Basophilic
		Hyperplasia, Nos
		Inflammation, Multifocal
Lung	Alveoli	Histiocytosis
Pancreas		Acinar-Cell Adenoma
Testis		Interstitial-Cell Tumor
		Mesothelioma, Malignant
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C04

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Mineralization Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C05

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Pheochromocytoma

Eye

Sclera

Thrombosis, Nos

Kidney

Mineralization

Liver

Nephropathy

Angiectasis

Cytoplasmic Change, Basophilic

Lung

Bile Duct

Hyperplasia, Nos

Lymph node

Alveoli

Histiocytosis

Mammary gland

Mandibular Lymph Node

Degeneration, Cystic

Testis

Fibroadenoma

Thymus

Interstitial-Cell Tumor

Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C06

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma, Malignant
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Mineralization
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
Lung	Alveoli	Histiocytosis
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mesenteric Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Skin		Keratoacanthoma
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C07

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Dosing Accident

**HISTO:**

---

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Fibrosis, Cholangio
	Bile Duct	Hyperplasia, Nos
Preputial gland		Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 3\_C08

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Moribund Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Eye

Hemorrhage  
Inflammation, Suppurative

Sclera

Mineralization

Kidney

Nephropathy

Liver

Metamorphosis, Fatty

Lung

Alveoli

Histiocytosis

Prostate

Inflammation, Chronic

Testis

Interstitial-Cell Tumor

Thymus

Hemorrhage

Unspecified

Pelvis Nos

Osteosarcoma

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 3\_C09

TRT#: 3

SEX: Male

DAY ON TEST:

DOSE: 0

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Lipoidosis
Blood vessel	Pulmonary Artery Nos	Mineralization
Brain	Stem	Displacement, Nos
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Alveolar/Bronchiolar Adenoma
	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
Nasal cavity		Inflammation, Suppurative
Pancreas	Islets	Islet-Cell Adenoma
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Prostate		Inflammation, Chronic
Seminal vesicle		Atrophy, Nos
		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Atrophy, Nos
		Hyperplasia, Interstitial Cell
Thymus		Hyperplasia, Epithelial

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C10

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Nasal cavity		Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Testis		Interstitial-Cell Tumor
Unspecified		Fibroma

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C11

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Blood vessel  
Heart

Pulmonary Artery Nos  
Myocardium Nos

Mineralization  
Fibrosis  
Inflammation, Suppurative

Kidney  
Liver

Bile Duct

Inflammation, Suppurative  
Hyperplasia, Nos  
Inflammation, Chronic  
Metamorphosis, Fatty

Lymph node  
Prostate  
Testis  
Unspecified

Mediastinal Lymph Node

Hemorrhage  
Inflammation, Suppurative  
Interstitial-Cell Tumor  
Leukemia, Mononuclear Cell

Multiple Organs Nos

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C12

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Blood vessel

Pulmonary Artery Nos

Mineralization

Liver

Centrilobular

Necrosis, Nos

Lung

Edema, Nos

Hemorrhage

Stomach

Fundus

Degeneration, Cystic

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 3\_C13

TRT#: 3

SEX: Male

DAY ON TEST:

DOSE: 0

DISP: Terminal Sacrifice

HISTO:

**OBSERVATIONS**

Esophagus		Foreign Body, Nos Inflammation, Granulomatous Focal
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Mineralization Nephropathy
Liver		Angiectasis Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		Hyperplasia, C Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C14

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Abdominal Cavity	Necrosis, Fat

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C15

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Pheochromocytoma

Blood vessel

Pheochromocytoma, Malignant

Heart

Pulmonary Artery Nos

Mineralization

Myocardium Nos

Fibrosis

Atrium

Thrombosis, Nos

Kidney

Nephropathy

Liver

Pigmentation, Nos

Cytoplasmic Change, Basophilic

Cytoplasmic Change, Nos

Bile Duct

Hyperplasia, Nos

Lung

Alveoli

Histiocytosis

Lymph node

Mediastinal Lymph Node

Hemosiderosis

Pituitary gland

Anterior Pituitary

Hyperplasia, Focal

Prostate

Hyperplasia, Epithelial

Testis

Interstitial-Cell Tumor

Mesothelioma, Malignant

Unspecified

Multiple Organs Nos

Mesothelioma, Metastatic

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C16

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Mineralization
		Nephropathy
Liver		Angiectasis
		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Pancreas	Acinus	Atrophy, Nos
	Islets	Hyperplasia, Nos
Testis		Hypospermatogenesis
		Interstitial-Cell Tumor
Unspecified	Abdominal Cavity	Necrosis, Fat
Urinary bladder		Transitional-Cell Papilloma

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C17

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Hernia, Nos
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Renal Lymph Node	Degeneration, Cystic
	Renal Lymph Node	Hemorrhage
Oral mucosa	Mouth Nos	Hemorrhage
Skin	Head Nos	Carcinoma, Nos
Testis		Hyperplasia, Interstitial Cell

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C18

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Congestion, Nos
Lymph node	Mesenteric Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Forestomach	Inflammation, Chronic
Thymus		Hemorrhage
Thyroid		Hyperplasia, C Cell
Unspecified		Fibroma

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C19

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
	Atrium	Thrombosis, Nos
Kidney		Nephropathy
Liver		Angiectasis
	Bile Duct	Hyperplasia, Nos
		Metamorphosis, Fatty
Lung	Alveoli	Histiocytosis
Pancreas	Islets	Islet-Cell Adenoma
Preputial gland		Dilatation, Ducts
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C20

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
		Neoplastic Nodule
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pancreas	Acinus	Hyperplasia, Nos
Preputial gland		Abscess, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Unspecified	Abdominal Cavity	Necrosis, Fat

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C21

**TRT#:** 3

**DOSE:** 0

**SEX:** Male

**DISP:** Terminal Sacrifice

**DAY ON TEST:**

**HISTO:**

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**OBSERVATIONS**

Brain	Stem	Displacement, Nos
Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Unspecified		Lipoma

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C22

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Lipoidosis
Blood vessel	Pulmonary Artery Nos	Mineralization
Brain	Stem	Displacement, Nos
Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
Nasal cavity		Inflammation, Suppurative
Pancreas		Acinar-Cell Adenoma
	Islets	Islet-Cell Adenoma
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Thyroid		Hyperplasia, C Cell
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C23

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart		Osteosarcoma, Metastatic
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Osteosarcoma, Metastatic
Lymph node	Mediastinal Lymph Node	Hemorrhage
Nasal cavity		Inflammation, Suppurative
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Unspecified	Pelvis Nos	Osteosarcoma

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C24

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Pheochromocytoma

Kidney

Nephropathy

Liver

Cytoplasmic Change, Basophilic

Lung

Alveoli

Histiocytosis

Mammary gland

Fibroadenoma

Pituitary gland

Anterior Pituitary

Hyperplasia, Focal

Stomach

Fundus

Degeneration, Cystic

Testis

Interstitial-Cell Tumor

Thymus

Hyperplasia, Epithelial

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C25

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
		Metamorphosis, Fatty
		Neoplastic Nodule
Lung		Hemorrhage
Mammary gland	Mammary Duct	Polyp, Inflammatory
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Cyst, Nos
	Anterior Pituitary	Hyperplasia, Focal
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
		Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C26

**TRT#:** 3

**DOSE:** 0

**SEX:** Male

**DISP:** Natural Death

**DAY ON TEST:**

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Blood vessel

Brain

Heart

Kidney

Liver

Lung

Pituitary gland

Testis

Pulmonary Artery Nos

Stem

Myocardium Nos

Bile Duct

Anterior Pituitary

Pheochromocytoma

Mineralization

Displacement, Nos

Inflammation, Chronic

Nephropathy

Hyperplasia, Nos

Congestion, Nos

Adenoma, Nos

Interstitial-Cell Tumor

---

PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C27

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Kidney

Nephropathy

Liver

Nephrosis, Hydro

Inflammation, Chronic

Metamorphosis, Fatty

Thrombosis, Nos

Nasal cavity

Inflammation, Suppurative

Seminal vesicle

Abscess, Nos

Testis

Interstitial-Cell Tumor

Thyroid

Hyperplasia, C Cell

Unspecified

Multiple Organs Nos

Embolus, Septic

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C28

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Medulla

Cyst, Nos

Hyperplasia, Focal

Kidney

Papilla

Lipoidosis

Mineralization

Liver

Bile Duct

Nephropathy

Hyperplasia, Nos

Lymph node

Mandibular Lymph Node

Degeneration, Cystic

Nasal cavity

Inflammation, Suppurative

Preputial gland

Abscess, Nos

Prostate

Hyperplasia, Epithelial

Stomach

Fundus

Degeneration, Cystic

Testis

Interstitial-Cell Tumor

Thymus

Hyperplasia, Epithelial

Unspecified

Fibroma

Abdominal Cavity

Necrosis, Fat

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C29

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Lipoidosis
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Hyperplasia, Interstitial Cell
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C30

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Blood vessel

Eye

Heart

Kidney

Liver

Lung

Lymph node

Mammary gland

Pancreas

Testis

Pulmonary Artery Nos

Sclera

Myocardium Nos

Bile Duct

Alveoli

Mediastinal Lymph Node

Acinus

Acinus

Lipoidosis

Mineralization

Mineralization

Fibrosis

Nephropathy

Hyperplasia, Nos

Histiocytosis

Hemorrhage

Fibroadenoma

Atrophy, Nos

Hyperplasia, Nos

Interstitial-Cell Tumor

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C31

**TRT#:** 3

**DOSE:** 0

**SEX:** Male

**DISP:** Natural Death

**DAY ON TEST:**

**HISTO:**

**OBSERVATIONS**

Adrenal gland		Pheochromocytoma, Malignant
Blood vessel	Pulmonary Artery Nos	Mineralization
Brain		Spongiosis, Status
Eye	Sclera	Mineralization
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Inflammation, Interstitial
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
Nasal cavity		Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Adenoma, Nos
	Anterior Pituitary	Cyst, Nos
Prostate		Inflammation, Suppurative
Seminal vesicle		Inflammation, Chronic
Thyroid		C-Cell Adenoma
Unspecified	Abdominal Cavity	Necrosis, Fat
Urinary bladder		Inflammation, Suppurative

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 3\_C32

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Eye

Heart

Kidney

Liver

Pituitary gland

Stomach

Testis

Unspecified

Sclera

Myocardium Nos

Bile Duct

Anterior Pituitary

Forestomach

Multiple Organs Nos

Pheochromocytoma

Mineralization

Fibrosis

Nephropathy

Pyelonephritis, Nos

Hyperplasia, Nos

Cyst, Nos

Ulcer, Nos

Interstitial-Cell Tumor

Fibroma

Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 3\_C33

TRT#: 3

SEX: Male

DAY ON TEST:

DOSE: 0

DISP: Natural Death

HISTO:

OBSERVATIONS

Adrenal gland	Medulla	Hyperplasia, Focal Lipoidosis Pheochromocytoma
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos Metamorphosis, Fatty Necrosis, Nos
Lung		Hemorrhage Hemosiderosis Inflammation, Interstitial
Nasal cavity		Inflammation, Chronic
Pituitary gland	Anterior Pituitary	Hyperplasia, Focal
Prostate		Inflammation, Chronic
Seminal vesicle		Inflammation, Chronic
Stomach	Forestomach	Inflammation, Chronic
Testis		Hyperplasia, Interstitial Cell Hypospermatogenesis Interstitial-Cell Tumor
Unspecified	Multiple Organs Nos Adipose Tissue	Leukemia, Mononuclear Cell Necrosis, Fat

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572  
**Test Type:** Long-Term  
**Route:** Gavage  
**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene  
**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014  
**Time Report Requested:** 14:01:20  
**First Dose M/F:** NA / NA  
**Lab:** NA

**ANIMAL ID:** 3\_C34

**TRT#:** 3  
**DOSE:** 0

**SEX:** Male  
**DISP:** Terminal Sacrifice

**DAY ON TEST:**  
**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Hemorrhage
		Nephropathy
Liver		Cytoplasmic Change, Basophilic
	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Nasal cavity		Inflammation, Suppurative
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

---

**ANIMAL ID:** 3\_C35

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Adrenal gland

Heart

Kidney

Liver

Pancreas

Pituitary gland

Prostate

Skin

Testis

Myocardium Nos

Bile Duct

Acinus

Anterior Pituitary

Pheochromocytoma

Fibrosis

Nephropathy

Hyperplasia, Nos

Hyperplasia, Nos

Hemorrhage

Inflammation, Chronic

Trichoepithelioma

Interstitial-Cell Tumor

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C36

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Cytoplasmic Change, Basophilic
Lung	Alveoli	Histiocytosis
Lymph node	Mediastinal Lymph Node	Hemorrhage
Pancreas	Acinus	Hyperplasia, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Testis		Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C37

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Moribund Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Medulla

Hyperplasia, Focal

Eye

Sclera

Mineralization

Kidney

Nephropathy

Liver

Bile Duct

Hyperplasia, Nos

Stomach

Fundus

Degeneration, Cystic

Testis

Hyperplasia, Interstitial Cell

Hypospermatogenesis

Thymus

Interstitial-Cell Tumor

Unspecified

Hyperplasia, Epithelial

Fibroma

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C38

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Eye		Cataract
	Sclera	Mineralization
		Phthisis Bulbi
Heart	Myocardium Nos	Fibrosis
Kidney	Papilla	Mineralization
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Degeneration, Cystic
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Preputial gland		Inflammation, Chronic
Seminal vesicle		Atrophy, Nos
Skin		Keratoacanthoma
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Thyroid		Hyperplasia, C Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C39

**TRT#:** 3

**DOSE:** 0

**SEX:** Male

**DISP:** Natural Death

**DAY ON TEST:**

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Heart

Kidney

Liver

Lung

Lymph node

Pituitary gland

Testis

Myocardium Nos

Centrilobular

Mediastinal Lymph Node

Anterior Pituitary

Pheochromocytoma

Fibrosis

Nephropathy

Necrosis, Nos

Congestion, Nos

Hemorrhage

Hemorrhage

Hyperplasia, Interstitial Cell

Interstitial-Cell Tumor

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C40

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal Pheochromocytoma
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Angiectasis
Pancreas	Bile Duct	Hyperplasia, Nos
	Acinus	Atrophy, Nos
	Acinus	Hyperplasia, Nos
	Islets	Islet-Cell Adenoma
Preputial gland		Inflammation, Chronic
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C41

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Adrenal gland

Blood vessel

Heart

Kidney

Larynx

Liver

Lung

Preputial gland

Testis

Thymus

Unspecified

Pulmonary Artery Nos

Myocardium Nos

Bile Duct

Pheochromocytoma

Mineralization

Fibrosis

Hemorrhage

Nephropathy

Inflammation, Suppurative

Hyperplasia, Nos

Inflammation, Interstitial

Inflammation, Chronic

Interstitial-Cell Tumor

Hyperplasia, Epithelial

Fibroma

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C42

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

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**OBSERVATIONS**

Heart	Myocardium Nos	Inflammation, Chronic
Liver		Congestion, Nos
		Cytoplasmic Change, Basophilic
	Centrilobular	Necrosis, Nos
Lung		Hemorrhage
Pancreas		Hemorrhage

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 3\_C43

TRT#: 3

SEX: Male

DAY ON TEST:

DOSE: 0

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland		Lipoidosis
Blood vessel	Pulmonary Artery Nos	Mineralization
Bone	Femur	Osteosclerosis
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Intestine Small	Mesentery Nos	Inflammation, Chronic
Kidney		Nephropathy
Liver		Cytoplasmic Change, Eosinophilic
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Mammary gland		Dilatation, Ducts
Nasal cavity		Hemorrhage
Pancreas	Acinus	Atrophy, Nos
	Islets	Islet-Cell Carcinoma
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Prostate		Abscess, Nos
		Inflammation, Chronic
Seminal vesicle		Inflammation, Chronic
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified		Fibroma
	Multiple Organs Nos	Leukemia, Mononuclear Cell

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C44

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Hemorrhage
		Nephropathy
Liver	Bile Duct	Hyperplasia, Nos
Lung		Alveolar/Bronchiolar Adenoma
		Alveolar/Bronchiolar Carcinoma
		Epithelialization
	Alveoli	Histiocytosis
Mammary gland		Dilatation, Ducts
Pancreas	Acinus	Atrophy, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Stomach	Fundus	Degeneration, Cystic
Unspecified		Fibroma
	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C45

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Adrenal gland

Cortex Nos

Hyperplasia, Focal

Heart

Myocardium Nos

Inflammation, Chronic

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C46

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

---

**OBSERVATIONS**

Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Fibrosis, Cholangio
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C47

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Natural Death

**HISTO:**

**OBSERVATIONS**

Adrenal gland	Medulla	Hyperplasia, Focal
Ear	Middle Ear	Inflammation, Suppurative
Eye	Sclera	Mineralization
Liver	Centrilobular	Metamorphosis, Fatty
	Centrilobular	Necrosis, Nos
Lung		Infarct, Nos
Pituitary gland	Anterior Pituitary	Adenoma, Nos
Prostate		Inflammation, Suppurative
Stomach	Fundus	Degeneration, Cystic
Testis		Hypospermatogenesis
Unspecified	Head	Sarcoma, Nos

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: C55572

Test Type: Long-Term

Route: Gavage

Species/Strain: Rat/F344

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: D-Limonene

CAS Number: 5989-27-5

Date Report Requested: 10/26/2014

Time Report Requested: 14:01:20

First Dose M/F: NA / NA

Lab: NA

ANIMAL ID: 3\_C48

TRT#: 3

SEX: Male

DAY ON TEST:

DOSE: 0

DISP: Terminal Sacrifice

HISTO:

OBSERVATIONS

Adrenal gland	Cortex Nos	Hypertrophy, Focal
Blood vessel	Pulmonary Artery Nos	Mineralization
Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
Liver		Cytoplasmic Change, Basophilic
		Hernia, Nos
	Bile Duct	Hyperplasia, Nos
Lung		Epithelialization
	Alveoli	Histiocytosis
Lymph node	Mandibular Lymph Node	Degeneration, Cystic
	Mediastinal Lymph Node	Hemorrhage
Nasal cavity		Inflammation, Suppurative
Pituitary gland	Anterior Pituitary	Angiectasis
	Anterior Pituitary	Hyperplasia, Focal
Prostate		Hyperplasia, Epithelial
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thymus		Hyperplasia, Epithelial
Thyroid		Follicular-Cell Carcinoma
		Hyperplasia, C Cell
Unspecified		Lipoma

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

**ANIMAL ID:** 3\_C49

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:**

**DOSE:** 0

**DISP:** Terminal Sacrifice

**HISTO:**

**OBSERVATIONS**

Eye	Sclera	Mineralization
Heart	Myocardium Nos	Fibrosis
Kidney		Nephropathy
		Pyelonephritis, Nos
Liver		Angiectasis
	Bile Duct	Hyperplasia, Nos
Lung	Alveoli	Histiocytosis
Pancreas	Acinus	Atrophy, Nos
Stomach	Fundus	Degeneration, Cystic
Testis		Interstitial-Cell Tumor
Thyroid		C-Cell Carcinoma
Unspecified	Multiple Organs Nos	Leukemia, Mononuclear Cell

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** C55572

**Test Type:** Long-Term

**Route:** Gavage

**Species/Strain:** Rat/F344

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** D-Limonene

**CAS Number:** 5989-27-5

**Date Report Requested:** 10/26/2014

**Time Report Requested:** 14:01:20

**First Dose M/F:** NA / NA

**Lab:** NA

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**ANIMAL ID:** 3\_C50

**TRT#:** 3

**DOSE:** 0

**SEX:** Male

**DISP:** Natural Death

**DAY ON TEST:**

**HISTO:**

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**OBSERVATIONS**

Bone		Chondrosarcoma
Liver	Bile Duct	Hyperplasia, Nos
Lymph node	Mesenteric Lymph Node	Hemosiderosis
Testis		Hyperplasia, Interstitial Cell

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**PRIMARY CAUSE OF DEATH**

-

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