

**Experiment Number:** 20609 - 02  
**Test Type:** 90-DAY  
**Route:** DOSED FEED  
**Species/Strain:** MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**

(+)-Usnic Acid  
**CAS Number:** 7562-61-0

**Date Report Requested:** 12/03/2020  
**Time Report Requested:** 12:50:16  
**First Dose M/F:** 08/07/08 / 08/07/08  
**Lab:** NCTR

**NTP Study Number:** C20609  
**Lock Date:** 07/01/2013  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.2.3\_002  
**PWG Approval Date:** NONE

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
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(+)-Usnic Acid  
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## SUMMARY OF STATISTICALLY SIGNIFICANT ( $P \leq .05$ ) RESULTS IN THE ANALYSIS OF (+)-USNIC ACID

### MALE MICE

#### Organ

Liver

### FEMALE MICE

#### Organ

Brain, Brain Stem  
Brain, Cerebellum  
Brain, Cerebrum  
Liver  
Lung  
Nose  
Spleen

#### Morphology

Vacuolization Cytoplasmic

#### Morphology

Hemorrhage  
Hemorrhage  
Hemorrhage  
Vacuolization Cytoplasmic  
Hemorrhage  
Hemorrhage  
Hyperplasia Lymphoid

Experiment Number: 20609 - 02  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

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DOSE	Control 0 ppm	Usnic 360 ppm
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Adrenal Cortex: Subcapsular  
Hyperplasia

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**LESION RATES**

OVERALL (a)	1/10 (10%)	1/10 (10%)
POLY-3 RATE (b)	1/10.00	1/10.00
POLY-3 PERCENT (g)	10%	10%
TERMINAL (d)	1/10 (10%)	1/10 (10%)
FIRST INCIDENCE	95 (T)	95 (T)

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**STATISTICAL TESTS**

POLY 3	P=0.760
POLY 1.5	P=0.760
POLY 6	P=0.760
COCH-ARM / FISHERS	P=0.763N
MAX-ISO-POLY-3	P=1.000

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Bone Marrow  
Hyperplasia**

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Bone: Cranium  
Fracture**

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**LESION RATES**

<b>OVERALL (a)</b>	0/0 (0%)	0/0 (0%)
<b>POLY-3 RATE (b)</b>	0/0.00	0/0.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/0 (0%)	0/0 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Bone: Cranium  
Hemorrhage**

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**LESION RATES**

<b>OVERALL (a)</b>	0/0 (0%)	0/0 (0%)
<b>POLY-3 RATE (b)</b>	0/0.00	0/0.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/0 (0%)	0/0 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

---

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Brain, Brain Stem  
Hemorrhage**

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Brain, Cerebellum  
Hemorrhage**

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

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<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Brain, Cerebrum  
Hemorrhage**

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

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DOSE	Control 0 ppm	Usnic 360 ppm
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Liver  
Inflammation Chronic

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**LESION RATES**

OVERALL (a)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/10.00
POLY-3 PERCENT (g)	10%	0%
TERMINAL (d)	1/10 (10%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---

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**STATISTICAL TESTS**

POLY 3	P=0.500N
POLY 1.5	P=0.500N
POLY 6	P=0.500N
COCH-ARM / FISHERS	P=0.500N
MAX-ISO-POLY-3	P=0.158N

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(+)-Usnic Acid  
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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

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DOSE	Control 0 ppm	Usnic 360 ppm
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Liver  
Tension Lipidosis

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**LESION RATES**

OVERALL (a)	1/10 (10%)	2/10 (20%)
POLY-3 RATE (b)	1/10.00	2/10.00
POLY-3 PERCENT (g)	10%	20%
TERMINAL (d)	1/10 (10%)	2/10 (20%)
FIRST INCIDENCE	95 (T)	95 (T)

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**STATISTICAL TESTS**

POLY 3	P=0.500
POLY 1.5	P=0.500
POLY 6	P=0.500
COCH-ARM / FISHERS	P=0.500
MAX-ISO-POLY-3	P=0.274

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Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

---

DOSE	Control 0 ppm	Usnic 360 ppm
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Liver  
Vacuolization Cytoplasmic

**LESION RATES**

OVERALL (a)	6/10 (60%)	2/10 (20%)
POLY-3 RATE (b)	6/10.00	2/10.00
POLY-3 PERCENT (g)	60%	20%
TERMINAL (d)	6/10 (60%)	2/10 (20%)
FIRST INCIDENCE	95 (T)	95 (T)

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**STATISTICAL TESTS**

POLY 3	P=0.077N
POLY 1.5	P=0.077N
POLY 6	P=0.077N
COCH-ARM / FISHERS	P=0.085N
MAX-ISO-POLY-3	P=0.029N*

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Experiment Number: 20609 - 02  
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Species/Strain: MICE/B6C3F1/NCTR

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(+)-Usnic Acid  
CAS Number: 7562-61-0

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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Lung  
Hemorrhage

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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Experiment Number: 20609 - 02  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

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DOSE	Control 0 ppm	Usnic 360 ppm
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Lymph Node, Mesenteric  
Hyperplasia Lymphoid

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**LESION RATES**

OVERALL (a)	3/10 (30%)	2/10 (20%)
POLY-3 RATE (b)	3/10.00	2/10.00
POLY-3 PERCENT (g)	30%	20%
TERMINAL (d)	3/10 (30%)	2/10 (20%)
FIRST INCIDENCE	95 (T)	95 (T)

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**STATISTICAL TESTS**

POLY 3	P=0.500N
POLY 1.5	P=0.500N
POLY 6	P=0.500N
COCH-ARM / FISHERS	P=0.500N
MAX-ISO-POLY-3	P=0.310N

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Experiment Number: 20609 - 02  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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**Nose  
Hemorrhage**

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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Preputial Gland  
Cyst

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	1/10 (10%)
<b>POLY-3 RATE (b)</b>	0/10.00	1/10.00
<b>POLY-3 PERCENT (g)</b>	0%	10%
<b>TERMINAL (d)</b>	0/10 (0%)	1/10 (10%)
<b>FIRST INCIDENCE</b>	---	95 (T)

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**STATISTICAL TESTS**

<b>POLY 3</b>	P=0.500
<b>POLY 1.5</b>	P=0.500
<b>POLY 6</b>	P=0.500
<b>COCH-ARM / FISHERS</b>	P=0.500
<b>MAX-ISO-POLY-3</b>	P=0.158

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

---

DOSE	Control 0 ppm	Usnic 360 ppm
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Spleen  
Hematopoietic Cell Proliferation

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**LESION RATES**

OVERALL (a)	0/10 (0%)	2/10 (20%)
POLY-3 RATE (b)	0/10.00	2/10.00
POLY-3 PERCENT (g)	0%	20%
TERMINAL (d)	0/10 (0%)	2/10 (20%)
FIRST INCIDENCE	---	95 (T)

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**STATISTICAL TESTS**

POLY 3	P=0.227
POLY 1.5	P=0.227
POLY 6	P=0.227
COCH-ARM / FISHERS	P=0.237
MAX-ISO-POLY-3	P=0.066

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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Spleen  
Hyperplasia Lymphoid

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**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	2/10 (20%)
<b>POLY-3 RATE (b)</b>	0/10.00	2/10.00
<b>POLY-3 PERCENT (g)</b>	0%	20%
<b>TERMINAL (d)</b>	0/10 (0%)	2/10 (20%)
<b>FIRST INCIDENCE</b>	---	95 (T)

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**STATISTICAL TESTS**

<b>POLY 3</b>	P=0.227
<b>POLY 1.5</b>	P=0.227
<b>POLY 6</b>	P=0.227
<b>COCH-ARM / FISHERS</b>	P=0.237
<b>MAX-ISO-POLY-3</b>	P=0.066

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

---

DOSE	Control 0 ppm	Usnic 360 ppm
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Stomach, Forestomach: Epithelium  
Hyperplasia

---

**LESION RATES**

OVERALL (a)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/10.00
POLY-3 PERCENT (g)	10%	0%
TERMINAL (d)	1/10 (10%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---

---

**STATISTICAL TESTS**

POLY 3	P=0.500N
POLY 1.5	P=0.500N
POLY 6	P=0.500N
COCH-ARM / FISHERS	P=0.500N
MAX-ISO-POLY-3	P=0.158N

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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---

Thymus  
Hyperplasia Lymphoid

---

**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

---

**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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---

Thymus  
Necrosis

---

**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

---

**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

**Males**

---

<b>DOSE</b>	<b>Control 0 ppm</b>	<b>Usnic 360 ppm</b>
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---

Thyroid Gland  
Ectopic Thymus

---

**LESION RATES**

<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00
<b>POLY-3 PERCENT (g)</b>	0%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)
<b>FIRST INCIDENCE</b>	---	---

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**STATISTICAL TESTS**

<b>POLY 3</b>	(n)
<b>POLY 1.5</b>	(n)
<b>POLY 6</b>	(n)
<b>COCH-ARM / FISHERS</b>	(n)
<b>MAX-ISO-POLY-3</b>	(n)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

**Males**

---

DOSE	Control 0 ppm	Usnic 360 ppm
------	---------------	---------------

---

Urinary Bladder: Lumen  
Dilatation

**LESION RATES**

OVERALL (a)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	1/10.00
POLY-3 PERCENT (g)	0%	10%
TERMINAL (d)	0/10 (0%)	1/10 (10%)
FIRST INCIDENCE	---	95 (T)

---

**STATISTICAL TESTS**

POLY 3	P=0.500
POLY 1.5	P=0.500
POLY 6	P=0.500
COCH-ARM / FISHERS	P=0.500
MAX-ISO-POLY-3	P=0.158

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Adrenal Cortex: Subcapsular Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	10/10 (100%)	1/1 (100%)	10/10 (100%)
POLY-3 RATE (b)	10/10.00	1/1.00	10/10.00
POLY-3 PERCENT (g)	100%	100%	100%
TERMINAL (d)	10/10 (100%)	0/0 (0%)	10/10 (100%)
FIRST INCIDENCE	95 (T)	22	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)

---



Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Bone Marrow Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	10%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310N	P=0.943N	P=0.500N
POLY 1.5	P=0.325N	P=0.941N	P=0.500N
POLY 6	P=0.309N	P=0.943N	P=0.500N
COCH-ARM / FISHERS	P=0.482N	P=0.909N	P=0.500N
MAX-ISO-POLY-3	P=0.233N	P=0.498N	P=0.159N

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Bone: Cranium Fracture</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/0 (0%)	1/1 (100%)	0/0 (0%)
POLY-3 RATE (b)	0/0.00	1/1.00	0/0.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	---	22	---
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Bone: Cranium</b>			
<b>Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/0 (0%)	1/1 (100%)	0/0 (0%)
POLY-3 RATE (b)	0/0.00	1/1.00	0/0.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	---	22	---
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Brain, Brain Stem Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	22	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.551N	P=0.091	(e)
POLY 1.5	P=0.551N	P=0.091	(e)
POLY 6	P=0.551N	P=0.091	(e)
COCH-ARM / FISHERS	P=0.551N	P=0.091	(e)
MAX-ISO-POLY-3	(e)	P<0.001**	(e)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Brain, Cerebellum Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	22	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.551N	P=0.091	(e)
POLY 1.5	P=0.551N	P=0.091	(e)
POLY 6	P=0.551N	P=0.091	(e)
COCH-ARM / FISHERS	P=0.551N	P=0.091	(e)
MAX-ISO-POLY-3	(e)	P<0.001**	(e)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Brain, Cerebrum Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	22	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.551N	P=0.091	(e)
POLY 1.5	P=0.551N	P=0.091	(e)
POLY 6	P=0.551N	P=0.091	(e)
COCH-ARM / FISHERS	P=0.551N	P=0.091	(e)
MAX-ISO-POLY-3	(e)	P<0.001**	(e)

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<hr/>			
Liver Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	2/10 (20%)
POLY-3 RATE (b)	0/10.00	0/0.01	2/10.00
POLY-3 PERCENT (g)	0%	0%	20%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	2/10 (20%)
FIRST INCIDENCE	---	---	95 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.131	(e)	P=0.227
POLY 1.5	P=0.138	(e)	P=0.227
POLY 6	P=0.130	(e)	P=0.227
COCH-ARM / FISHERS	P=0.192	(e)	P=0.237
MAX-ISO-POLY-3	P=0.100	(e)	P=0.067

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<hr/>			
Liver			
Tension Lipidosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	10%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310N	P=0.943N	P=0.500N
POLY 1.5	P=0.325N	P=0.941N	P=0.500N
POLY 6	P=0.309N	P=0.943N	P=0.500N
COCH-ARM / FISHERS	P=0.482N	P=0.909N	P=0.500N
MAX-ISO-POLY-3	P=0.233N	P=0.498N	P=0.159N

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<hr/>			
Liver			
Vacuolization Cytoplasmic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	4/10 (40%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	4/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	40%	100%	0%
TERMINAL (d)	4/10 (40%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	22	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.013N*	P=0.463	P=0.033N*
POLY 1.5	P=0.013N*	P=0.463	P=0.033N*
POLY 6	P=0.013N*	P=0.463	P=0.033N*
COCH-ARM / FISHERS	P=0.027N*	P=0.455	P=0.043N*
MAX-ISO-POLY-3	P=0.004N**	P=0.206	P=0.007N**

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<hr/>			
Lung Hemorrhage			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	22	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.551N	P=0.091	(e)
POLY 1.5	P=0.551N	P=0.091	(e)
POLY 6	P=0.551N	P=0.091	(e)
COCH-ARM / FISHERS	P=0.551N	P=0.091	(e)
MAX-ISO-POLY-3	(e)	P<0.001**	(e)

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
Time Report Requested: 12:50:16  
First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Lymph Node, Mesenteric Hyperplasia Lymphoid</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.01	1/10.00
POLY-3 PERCENT (g)	0%	0%	10%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	1/10 (10%)
FIRST INCIDENCE	---	---	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310	(e)	P=0.500
POLY 1.5	P=0.325	(e)	P=0.500
POLY 6	P=0.309	(e)	P=0.500
COCH-ARM / FISHERS	P=0.449	(e)	P=0.500
MAX-ISO-POLY-3	P=0.233	(e)	P=0.159

---

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<hr/>			
Nose Hemorrhage			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/1 (100%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/1.00	0/10.00
POLY-3 PERCENT (g)	0%	100%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	22	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.551N	P=0.091	(e)
POLY 1.5	P=0.551N	P=0.091	(e)
POLY 6	P=0.551N	P=0.091	(e)
COCH-ARM / FISHERS	P=0.551N	P=0.091	(e)
MAX-ISO-POLY-3	(e)	P<0.001**	(e)

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Spleen</b>			
<b>Hematopoietic Cell Proliferation</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/10 (20%)	0/1 (0%)	2/10 (20%)
POLY-3 RATE (b)	2/10.00	0/0.01	2/10.00
POLY-3 PERCENT (g)	20%	0%	20%
TERMINAL (d)	2/10 (20%)	0/0 (0%)	2/10 (20%)
FIRST INCIDENCE	95 (T)	---	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.606	P=0.881N	P=0.702
POLY 1.5	P=0.614	P=0.874N	P=0.702
POLY 6	P=0.605	P=0.882N	P=0.702
COCH-ARM / FISHERS	P=0.664	P=0.818N	P=0.709N
MAX-ISO-POLY-3	P=0.666	P=0.498N	P=1.000

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Spleen</b>			
Hyperplasia Lymphoid			
<b>LESION RATES</b>			
OVERALL (a)	4/10 (40%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	4/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	40%	0%	0%
TERMINAL (d)	4/10 (40%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.016N*	P=0.831N	P=0.033N*
POLY 1.5	P=0.017N*	P=0.814N	P=0.033N*
POLY 6	P=0.016N*	P=0.834N	P=0.033N*
COCH-ARM / FISHERS	P=0.051N	P=0.636N	P=0.043N*
MAX-ISO-POLY-3	P=0.012N*	P=0.496N	P=0.007N**

Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Stomach, Forestomach: Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
CAS Number: 7562-61-0

Date Report Requested: 12/03/2020  
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First Dose M/F: 08/07/08 / 08/07/08  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Thymus</b>			
<b>Hyperplasia Lymphoid</b>			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	2/10 (20%)
POLY-3 RATE (b)	0/10.00	0/0.01	2/10.00
POLY-3 PERCENT (g)	0%	0%	20%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	2/10 (20%)
FIRST INCIDENCE	---	---	95 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.131	(e)	P=0.227
POLY 1.5	P=0.138	(e)	P=0.227
POLY 6	P=0.130	(e)	P=0.227
COCH-ARM / FISHERS	P=0.192	(e)	P=0.237
MAX-ISO-POLY-3	P=0.100	(e)	P=0.067

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Thymus Necrosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	10%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310N	P=0.943N	P=0.500N
POLY 1.5	P=0.325N	P=0.941N	P=0.500N
POLY 6	P=0.309N	P=0.943N	P=0.500N
COCH-ARM / FISHERS	P=0.482N	P=0.909N	P=0.500N
MAX-ISO-POLY-3	P=0.233N	P=0.498N	P=0.159N

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Thyroid Gland</b>			
<b>Ectopic Thymus</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	10%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310N	P=0.943N	P=0.500N
POLY 1.5	P=0.325N	P=0.941N	P=0.500N
POLY 6	P=0.309N	P=0.943N	P=0.500N
COCH-ARM / FISHERS	P=0.482N	P=0.909N	P=0.500N
MAX-ISO-POLY-3	P=0.233N	P=0.498N	P=0.159N

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: MICE/B6C3F1/NCTR

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Urinary Bladder: Lumen Dilatation</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.01	0/10.00
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	---	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)

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Experiment Number: 20609 - 02  
Test Type: 90-DAY  
Route: DOSED FEED  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN MICE(B6C3F1/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 ppm	Usnic 30 ppm	Usnic 360 ppm
<b>Uterus: Endometrium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/1 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.01	1/10.00
POLY-3 PERCENT (g)	0%	0%	10%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	1/10 (10%)
FIRST INCIDENCE	---	---	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310	(e)	P=0.500
POLY 1.5	P=0.325	(e)	P=0.500
POLY 6	P=0.309	(e)	P=0.500
COCH-ARM / FISHERS	P=0.449	(e)	P=0.500
MAX-ISO-POLY-3	P=0.233	(e)	P=0.159

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**Experiment Number:** 20609 - 02  
**Test Type:** 90-DAY  
**Route:** DOSED FEED  
**Species/Strain:** MICE/B6C3F1/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
(+)-Usnic Acid  
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## **LEGEND**

- (a) Number of tumor-bearing animals/number of animals examined at site.
  - (b) Number of tumor-bearing animals/Poly-3 number
  - (d) Observed incidence at terminal kill.
  - (e) Value of statistic cannot be computed.
  - (f) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between the controls and that dosed group.
  - (g) Poly-3 adjusted lifetime tumor incidence.
  - (n) No statistics are calculated if all dose groups have fewer than two tumors.
  - (I) Interim sacrifice
  - (T) Terminal sacrifice
  - # Tumor rates based on numbers of animals necropsied.
  - \* To the right of any statistical result, indicates significance at ( $P \leq 0.05$ ).
  - \*\* To the right of any statistical result, indicates significance at ( $P \leq 0.01$ ).
  - N Indicates a negative trend for all tests
- The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.

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