

**Experiment Number:** 20702 - 01  
**Test Type:** 90-DAY  
**Route:** DOSED FEED  
**Species/Strain:** RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Usnea Lichen  
**CAS Number:** USNEALICHEN

**Date Report Requested:** 12/03/2020  
**Time Report Requested:** 12:51:12  
**First Dose M/F:** 02/14/09 / 02/14/09  
**Lab:** NCTR

**NTP Study Number:** C20702  
**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

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## SUMMARY OF STATISTICALLY SIGNIFICANT (P<=.05) RESULTS IN THE ANALYSIS OF USNEA LICHEN

### MALE RATS

#### Organ

Adrenal Cortex  
Bone Marrow  
Epididymis  
  
Heart  
Kidney  
Liver  
Liver: Hepatocyte  
Lymph Node, Mandibular  
Mammary Gland  
Preputial Gland  
  
Prostate  
Seminal Vesicle  
Testes: Seminiferous Tubule  
Thymus

### FEMALE RATS

#### Organ

Adrenal Cortex  
Bone Marrow  
Kidney  
Liver: Hepatocyte  
Lymph Node, Mesenteric  
Thymus

#### Morphology

Vacuolization Cytoplasmic  
Hypocellularity  
Exfoliated Germ Cell  
Hypospermia  
Cardiomyopathy  
Nephropathy  
Inflammation Chronic  
Degeneration  
Hyperplasia Lymphoid  
Atrophy  
Inflammation  
Inflammation Chronic  
Atrophy  
Atrophy  
Degeneration  
Atrophy

#### Morphology

Vacuolization Cytoplasmic  
Hypocellularity  
Casts Protein  
Degeneration  
Hyperplasia Lymphoid  
Atrophy

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Adrenal Cortex</b>						
<b>Vacuolization Cytoplasmic</b>						
<b>LESION RATES</b>						
<b>OVERALL (a)</b>	4/10 (40%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	10/10 (100%)
<b>POLY-3 RATE (b)</b>	4/10.00	0/0.00	0/0.00	0/0.00	2/10.00	10/10.00
<b>POLY-3 PERCENT (g)</b>	40%	0%	0%	0%	20%	100%
<b>TERMINAL (d)</b>	4/10 (40%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/0 (0%)
<b>FIRST INCIDENCE</b>	95 (T)	---	---	---	95 (T)	32
<b>STATISTICAL TESTS</b>						
<b>POLY 3</b>	(e)	(e)	(e)	(e)	P=0.318N	P<0.001**
<b>POLY 1.5</b>	(e)	(e)	(e)	(e)	P=0.318N	P<0.001**
<b>POLY 6</b>	(e)	(e)	(e)	(e)	P=0.318N	P<0.001**
<b>COCH-ARM / FISHERS</b>	P=0.007**	(e)	(e)	(e)	P=0.314N	P=0.005**
<b>MAX-ISO-POLY-3</b>	(e)	(e)	(e)	(e)	P=0.172N	P<0.001**

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Bone Marrow Congestion</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.58
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	63.5%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.261
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.316
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Bone Marrow Hypocellularity</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Brain, Cerebrum</b>						
<b>Gliososis</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Brain, Cerebrum Mineralization</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

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 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Epididymis</b>						
<b>Exfoliated Germ Cell</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)



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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Epididymis</b>						
<b>Hypospermia</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Harderian Gland Infiltration Cellular Lymphocyte</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158	(e)

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Heart</b>						
<b>Cardiomyopathy</b>						
<b>LESION RATES</b>						
OVERALL (a)	7/10 (70%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	7/10 (70%)	0/10 (0%)
POLY-3 RATE (b)	7/10.00	0/0.00	0/0.00	0/0.00	7/10.00	0/0.61
POLY-3 PERCENT (g)	70%	0%	0%	0%	70%	0%
TERMINAL (d)	7/10 (70%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	7/10 (70%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.678	P=0.537N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.678	P=0.161N
POLY 6	(e)	(e)	(e)	(e)	P=0.678	P=0.670N
COCH-ARM / FISHERS	P=0.002N**	(e)	(e)	(e)	P=0.686N	P=0.002N**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=1.000	P=0.387N

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Heart: Myocardium</b>						
<b>Vacuolization Cytoplasmic</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.54
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	65%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	40
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.260
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.313
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Intestine Small, Ileum Hyperplasia Lymphoid</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.58
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)

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Date Report Requested: 12/03/2020  
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 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>						
<b>Casts Protein</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	2/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	20%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.227	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.227	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.227	(e)
COCH-ARM / FISHERS	P=0.673	(e)	(e)	(e)	P=0.237	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.066	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>						
<b>Hyaline Droplet</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>						
<b>Hydronephrosis</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	2/10 (20%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	2/2.51
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	79.6%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.142
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.216
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.121
COCH-ARM / FISHERS	P=0.355	(e)	(e)	(e)	P=0.500N	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.111



Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
Kidney Infarct						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney Mineralization</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney Nephropathy</b>						
<b>LESION RATES</b>						
OVERALL (a)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	4/10 (40%)	5/10 (50%)
POLY-3 RATE (b)	3/10.00	0/0.00	0/0.00	0/0.00	4/10.00	5/5.28
POLY-3 PERCENT (g)	30%	0%	0%	0%	40%	94.8%
TERMINAL (d)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	4/10 (40%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	95 (T)	35
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	P=0.029*
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	P=0.063
POLY 6	(e)	(e)	(e)	(e)	P=0.500	P=0.022*
COCH-ARM / FISHERS	P=0.247	(e)	(e)	(e)	P=0.500	P=0.325
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.325	P=0.025*

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
Liver Cyst						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	1/10.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	10%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	95 (T)	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	P=0.832	(e)	(e)	P=0.500	(e)	(e)
POLY 1.5	P=0.815N	(e)	(e)	P=0.500	(e)	(e)
POLY 6	P=0.833	(e)	(e)	P=0.500	(e)	(e)
COCH-ARM / FISHERS	P=0.632N	(e)	(e)	P=0.500	(e)	(e)
MAX-ISO-POLY-3	P=0.477	(e)	(e)	P=0.158	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
Liver Deformity						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/10.00	0/10.00	0/10.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	10%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	95 (T)	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	P=0.617N	P=0.500	(e)	(e)	(e)	(e)
POLY 1.5	P=0.586N	P=0.500	(e)	(e)	(e)	(e)
POLY 6	P=0.620N	P=0.500	(e)	(e)	(e)	(e)
COCH-ARM / FISHERS	P=0.492N	P=0.500	(e)	(e)	(e)	(e)
MAX-ISO-POLY-3	P=0.476N	P=0.158	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Liver</b>						
<b>Inflammation Chronic</b>						
<b>LESION RATES</b>						
<b>OVERALL (a)</b>	5/10 (50%)	1/10 (10%)	3/10 (30%)	4/10 (40%)	3/10 (30%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	5/10.00	1/10.00	3/10.00	4/10.00	3/10.00	0/0.61
<b>POLY-3 PERCENT (g)</b>	50%	10%	30%	40%	30%	0%
<b>TERMINAL (d)</b>	5/10 (50%)	1/10 (10%)	3/10 (30%)	4/10 (40%)	3/10 (30%)	0/0 (0%)
<b>FIRST INCIDENCE</b>	95 (T)	95 (T)	95 (T)	95 (T)	95 (T)	---
<b>STATISTICAL TESTS</b>						
<b>POLY 3</b>	P=0.559N	P=0.061N	P=0.329N	P=0.500N	P=0.329N	P=0.575N
<b>POLY 1.5</b>	P=0.455N	P=0.061N	P=0.329N	P=0.500N	P=0.329N	P=0.308N
<b>POLY 6</b>	P=0.567N	P=0.061N	P=0.329N	P=0.500N	P=0.329N	P=0.659N
<b>COCH-ARM / FISHERS</b>	P=0.044N*	P=0.070N	P=0.325N	P=0.500N	P=0.325N	P=0.016N*
<b>MAX-ISO-POLY-3</b>	P=0.434N	P=0.020N*	P=0.188N	P=0.332N	P=0.188N	P=0.425N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Liver</b>						
<b>Necrosis</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/10.00	0/10.00	0/10.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	10%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	95 (T)	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	P=0.617N	P=0.500	(e)	(e)	(e)	(e)
POLY 1.5	P=0.586N	P=0.500	(e)	(e)	(e)	(e)
POLY 6	P=0.620N	P=0.500	(e)	(e)	(e)	(e)
COCH-ARM / FISHERS	P=0.492N	P=0.500	(e)	(e)	(e)	(e)
MAX-ISO-POLY-3	P=0.476N	P=0.158	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Liver</b>						
<b>Tension Lipidosis</b>						
<b>LESION RATES</b>						
<b>OVERALL (a)</b>	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)
<b>POLY-3 RATE (b)</b>	0/10.00	0/10.00	0/10.00	0/10.00	1/10.00	0/0.61
<b>POLY-3 PERCENT (g)</b>	0%	0%	0%	0%	10%	0%
<b>TERMINAL (d)</b>	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/0 (0%)
<b>FIRST INCIDENCE</b>	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
<b>POLY 3</b>	P=0.146	(e)	(e)	(e)	P=0.500	(e)
<b>POLY 1.5</b>	P=0.185	(e)	(e)	(e)	P=0.500	(e)
<b>POLY 6</b>	P=0.143	(e)	(e)	(e)	P=0.500	(e)
<b>COCH-ARM / FISHERS</b>	P=0.555	(e)	(e)	(e)	P=0.500	(e)
<b>MAX-ISO-POLY-3</b>	P=0.145	(e)	(e)	(e)	P=0.158	(e)



Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Liver: Hepatocyte Degeneration</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/10 (0%)	1/10 (10%)	6/10 (60%)	10/10 (100%)	10/10 (100%)
POLY-3 RATE (b)	1/10.00	0/10.00	1/10.00	6/10.00	10/10.00	10/10.00
POLY-3 PERCENT (g)	10%	0%	10%	60%	100%	100%
TERMINAL (d)	1/10 (10%)	0/10 (0%)	1/10 (10%)	6/10 (60%)	10/10 (100%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	95 (T)	95 (T)	95 (T)	32
<b>STATISTICAL TESTS</b>						
POLY 3	P<0.001**	P=0.500N	P=0.760	P=0.018*	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.500N	P=0.760	P=0.018*	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.500N	P=0.760	P=0.018*	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.500N	P=0.763N	P=0.029*	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.158N	P=1.000	P=0.004**	P<0.001**	P<0.001**

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung Congestion</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.58
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	63.5%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.261
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.316
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung Hemorrhage</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung</b>						
<b>Infiltration Cellular Histiocyte</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.55
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	64.5%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	38
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.260
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.314
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung: Alveolar Epithelium Hyperplasia</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node, Mandibular Hyperplasia Lymphoid</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	2/10 (20%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	2/2.53
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	79.2%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	P=0.048*
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	P=0.077
POLY 6	(e)	(e)	(e)	(e)	P=0.500	P=0.041*
COCH-ARM / FISHERS	P=0.132	(e)	(e)	(e)	P=0.500	P=0.237
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158	P=0.039*

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node, Mesenteric Hyperplasia Lymphoid</b>						
<b>LESION RATES</b>						
OVERALL (a)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	3/10 (30%)	0/10 (0%)
POLY-3 RATE (b)	2/10.00	0/0.00	0/0.00	0/0.00	3/10.00	0/0.61
POLY-3 PERCENT (g)	20%	0%	0%	0%	30%	0%
TERMINAL (d)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	3/10 (30%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	P=0.667N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	P=0.553N
POLY 6	(e)	(e)	(e)	(e)	P=0.500	P=0.700N
COCH-ARM / FISHERS	P=0.184N	(e)	(e)	(e)	P=0.500	P=0.237N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.310	P=0.461N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node: Lumbar Hyperplasia Lymphoid</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/1 (100%)
POLY-3 RATE (b)	0/0.00	0/0.00	0/0.00	0/0.00	0/0.00	1/1.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	39
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)



Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Mammary Gland Atrophy</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	9/10 (90%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	9/9.04
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	99.6%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	35
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P<0.001**

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Nose Malformation</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.58
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	63.5%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.261
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.316
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas</b>						
<b>Infiltration Cellular Lymphocyte</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.56
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	64.1%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	36
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.261
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.315
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas</b>						
<b>Vacuolization Cytoplasmic</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.746N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.698N
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.759N
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.473N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas: Acinus Degeneration</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pituitary Gland: Pars Distalis Cyst</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Preputial Gland Infiltration Cellular Lymphocyte</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Preputial Gland Inflammation</b>						
<b>LESION RATES</b>						
OVERALL (a)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	4/10 (40%)	8/10 (80%)
POLY-3 RATE (b)	2/10.00	0/0.00	0/0.00	0/0.00	4/10.00	8/8.13
POLY-3 PERCENT (g)	20%	0%	0%	0%	40%	98.4%
TERMINAL (d)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	4/10 (40%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	95 (T)	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.318	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	P=0.318	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	P=0.318	P<0.001**
COCH-ARM / FISHERS	P=0.007**	(e)	(e)	(e)	P=0.314	P=0.012*
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.172	P<0.001**



Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Preputial Gland Inflammation Chronic</b>						
<b>LESION RATES</b>						
OVERALL (a)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	3/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	30%	0%	0%	0%	0%	0%
TERMINAL (d)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.095N	P=0.626N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.095N	P=0.458N
POLY 6	(e)	(e)	(e)	(e)	P=0.095N	P=0.675N
COCH-ARM / FISHERS	P=0.031N*	(e)	(e)	(e)	P=0.105N	P=0.105N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.025N*	P=0.449N

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Preputial Gland: Duct Ectasia</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	2/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	20%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	95 (T)	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.227	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.227	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.227	(e)
COCH-ARM / FISHERS	P=0.673	(e)	(e)	(e)	P=0.237	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.066	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Prostate Atrophy</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Seminal Vesicle Atrophy</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Testes: Seminiferous Tubule Degeneration</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thymus Atrophy</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	9/10 (90%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	9/9.06
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	99.3%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P<0.001**
POLY 6	(e)	(e)	(e)	(e)	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	(e)	(e)	(e)	P<0.001**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P<0.001**

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thymus Cyst</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.55
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	64.7%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	39
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.260
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.314
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)**  
**TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thyroid Gland Cyst</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.61
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)



Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
Thyroid Gland						
Ectopic Thymus						
<b>LESION RATES</b>						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.56
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	64.1%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	36
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.388
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.494
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.354
COCH-ARM / FISHERS	P=0.673	(e)	(e)	(e)	P=0.500N	P=0.763N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.158N	P=0.258

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Tissue NOS: Mediastinum Hemorrhage</b>						
<b>LESION RATES</b>						
OVERALL (a)	1/1 (100%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)
POLY-3 RATE (b)	1/1.00	0/0.00	0/0.00	0/0.00	0/0.00	0/0.00
POLY-3 PERCENT (g)	100%	0%	0%	0%	0%	0%
TERMINAL (d)	1/1 (100%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	95 (T)	---	---	---	---	---
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Males					
	Control 0 PPM	USNEA 30 PPM	USNEA 60 PPM	USNEA 120 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Urinary Bladder: Lumen Dilatation</b>						
<b>LESION RATES</b>						
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.58
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	63.5%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	---	---	---	32
<b>STATISTICAL TESTS</b>						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.261
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.316
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.244
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Adrenal Cortex</b>			
<b>Vacuolization Cytoplasmic</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	8/9 (89%)
POLY-3 RATE (b)	0/10.00	0/10.00	8/9.00
POLY-3 PERCENT (g)	0%	0%	88.9%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	28
<b>STATISTICAL TESTS</b>			
POLY 3	P<0.001**	(e)	P<0.001**
POLY 1.5	P<0.001**	(e)	P<0.001**
POLY 6	P<0.001**	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	P<0.001**
MAX-ISO-POLY-3	P<0.001**	(e)	P<0.001**

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Bone Marrow Congestion</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.33
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
 CAS Number: USNEALICHEN

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 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Bone Marrow Hypocellularity</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	8/9 (89%)
POLY-3 RATE (b)	0/10.00	0/10.00	8/9.00
POLY-3 PERCENT (g)	0%	0%	88.9%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	28
<b>STATISTICAL TESTS</b>			
POLY 3	P<0.001**	(e)	P<0.001**
POLY 1.5	P<0.001**	(e)	P<0.001**
POLY 6	P<0.001**	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	P<0.001**
MAX-ISO-POLY-3	P<0.001**	(e)	P<0.001**

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Brain, Cerebrum</b>			
<b>Gliososis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Brain, Cerebrum Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Clitoral Gland Infiltration Cellular Lymphocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/10 (0%)	2/10 (20%)
POLY-3 RATE (b)	1/10.00	0/10.00	2/3.29
POLY-3 PERCENT (g)	10%	0%	60.7%
TERMINAL (d)	1/10 (10%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	---	32
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.572	P=0.500N	P=0.182
POLY 1.5	P=0.466	P=0.500N	P=0.239
POLY 6	P=0.606	P=0.500N	P=0.169
COCH-ARM / FISHERS	P=0.355	P=0.500N	P=0.500
MAX-ISO-POLY-3	P=0.101	P=0.159N	P=0.131

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Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
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 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Clitoral Gland Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	4/10 (40%)	1/10 (10%)	4/10 (40%)
POLY-3 RATE (b)	4/10.00	1/10.00	4/4.23
POLY-3 PERCENT (g)	40%	10%	94.5%
TERMINAL (d)	4/10 (40%)	1/10 (10%)	1/1 (100%)
FIRST INCIDENCE	95 (T)	95 (T)	35
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.596	P=0.148N	P=0.124
POLY 1.5	P=0.545	P=0.148N	P=0.217
POLY 6	P=0.614	P=0.148N	P=0.105
COCH-ARM / FISHERS	P=0.596	P=0.152N	P=0.675N
MAX-ISO-POLY-3	P=0.066	P=0.058N	P=0.099

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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First Dose M/F: 02/14/09 / 02/14/09  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Clitoral Gland Inflammation Chronic</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/10 (20%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	2/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	20%	0%	0%
TERMINAL (d)	2/10 (20%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.176N	P=0.227N	P=0.620N
POLY 1.5	P=0.165N	P=0.227N	P=0.530N
POLY 6	P=0.178N	P=0.227N	P=0.642N
COCH-ARM / FISHERS	P=0.089N	P=0.237N	P=0.237N
MAX-ISO-POLY-3	P=0.246N	P=0.067N	P=0.417N

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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First Dose M/F: 02/14/09 / 02/14/09  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Clitoral Gland: Duct Ectasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	1/10.00	0/10.00	1/1.38
POLY-3 PERCENT (g)	10%	0%	72.4%
TERMINAL (d)	1/10 (10%)	0/10 (0%)	1/1 (100%)
FIRST INCIDENCE	95 (T)	---	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.630N	P=0.500N	P=0.376
POLY 1.5	P=0.706N	P=0.500N	P=0.470
POLY 6	P=0.601N	P=0.500N	P=0.353
COCH-ARM / FISHERS	P=0.673	P=0.500N	P=0.763N
MAX-ISO-POLY-3	P=0.278	P=0.159N	P=0.254

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Harderian Gland Infiltration Cellular Lymphocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/10 (20%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	2/10.00	0/10.00	1/2.34
POLY-3 PERCENT (g)	20%	0%	42.7%
TERMINAL (d)	2/10 (20%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	---	32
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.372N	P=0.227N	P=0.530
POLY 1.5	P=0.416N	P=0.227N	P=0.634
POLY 6	P=0.355N	P=0.227N	P=0.501
COCH-ARM / FISHERS	P=0.355N	P=0.237N	P=0.500N
MAX-ISO-POLY-3	P=0.389	P=0.067N	P=0.366

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<hr/>			
Heart			
Cardiomyopathy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	3/10 (30%)	1/10 (10%)	1/10 (10%)
POLY-3 RATE (b)	3/10.00	1/10.00	1/1.38
POLY-3 PERCENT (g)	30%	10%	72.4%
TERMINAL (d)	3/10 (30%)	1/10 (10%)	1/1 (100%)
FIRST INCIDENCE	95 (T)	95 (T)	95 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.338N	P=0.292N	P=0.494
POLY 1.5	P=0.367N	P=0.292N	P=0.653
POLY 6	P=0.323N	P=0.292N	P=0.451
COCH-ARM / FISHERS	P=0.184N	P=0.291N	P=0.291N
MAX-ISO-POLY-3	P=0.452	P=0.136N	P=0.361

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Heart: Myocardium</b>			
<b>Vacuolization Cytoplasmic</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

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

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Intestine Small, Ileum Hyperplasia Lymphoid</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	1/10 (10%)	0/9 (0%)
POLY-3 RATE (b)	1/10.00	1/10.00	0/1.33
POLY-3 PERCENT (g)	10%	10%	0%
TERMINAL (d)	1/10 (10%)	1/10 (10%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.778N	P=0.760	P=0.732N
POLY 1.5	P=0.717N	P=0.760	P=0.697N
POLY 6	P=0.788N	P=0.760	P=0.740N
COCH-ARM / FISHERS	P=0.348N	P=0.763N	P=0.526N
MAX-ISO-POLY-3	P=0.610N	P=1.000	P=0.444N

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Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

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 Usnea Lichen  
 CAS Number: USNEALICHEN

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 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>			
<b>Casts Protein</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	5/10 (50%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	5/10.00	0/1.38
POLY-3 PERCENT (g)	0%	50%	0%
TERMINAL (d)	0/10 (0%)	5/10 (50%)	0/1 (0%)
FIRST INCIDENCE	---	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.003**	P=0.008**	(e)
POLY 1.5	P=0.016*	P=0.008**	(e)
POLY 6	P=0.003**	P=0.008**	(e)
COCH-ARM / FISHERS	P=0.618	P=0.016*	(e)
MAX-ISO-POLY-3	P=0.004**	P<0.001**	(e)

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>			
Hyaline Droplet			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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)

---

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>			
<b>Hydronephrosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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)

---

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney Infarct</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/10.00	1/2.33
POLY-3 PERCENT (g)	0%	0%	42.9%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	35
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.642	(e)	P=0.286
POLY 1.5	P=0.493	(e)	P=0.327
POLY 6	P=0.684	(e)	P=0.276
COCH-ARM / FISHERS	P=0.267	(e)	P=0.500
MAX-ISO-POLY-3	P=0.139	(e)	P=0.142

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	10/10 (100%)	10/10 (100%)	9/10 (90%)
POLY-3 RATE (b)	10/10.00	10/10.00	9/9.03
POLY-3 PERCENT (g)	100%	100%	99.7%
TERMINAL (d)	10/10 (100%)	10/10 (100%)	1/1 (100%)
FIRST INCIDENCE	95 (T)	95 (T)	28
<b>STATISTICAL TESTS</b>			
POLY 3	P=1.000N	(e)	P=1.000N
POLY 1.5	P=0.996N	(e)	P=1.000N
POLY 6	P=1.000N	(e)	P=1.000N
COCH-ARM / FISHERS	P=0.267N	(e)	P=0.500N
MAX-ISO-POLY-3	P=0.163N	(e)	P=0.171N

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Kidney</b>			
<b>Nephropathy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
Liver Cyst			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
Liver Deformity			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<hr/>			
Liver Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	---
<hr/>			
<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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
Liver Necrosis			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<hr/>			
Liver			
Tension Lipidosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	---
<hr/>			
<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: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Liver: Hepatocyte Degeneration</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	1/1 (100%)
FIRST INCIDENCE	---	---	28
<b>STATISTICAL TESTS</b>			
POLY 3	P<0.001**	(e)	P<0.001**
POLY 1.5	P<0.001**	(e)	P<0.001**
POLY 6	P<0.001**	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	P<0.001**
MAX-ISO-POLY-3	P<0.001**	(e)	(e)

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<hr/>			
Lung Congestion			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	---
<hr/>			
<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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
Lung Hemorrhage			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung</b>			
<b>Infiltration Cellular Histiocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lung: Alveolar Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node, Mandibular Hyperplasia Lymphoid</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/10 (20%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	2/10.00	0/10.00	0/1.33
POLY-3 PERCENT (g)	20%	0%	0%
TERMINAL (d)	2/10 (20%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.181N	P=0.227N	P=0.626N
POLY 1.5	P=0.171N	P=0.227N	P=0.545N
POLY 6	P=0.182N	P=0.227N	P=0.645N
COCH-ARM / FISHERS	P=0.097N	P=0.237N	P=0.263N
MAX-ISO-POLY-3	P=0.251N	P=0.067N	P=0.418N

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Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node, Mesenteric Hyperplasia Lymphoid</b>			
<b>LESION RATES</b>			
OVERALL (a)	4/10 (40%)	4/10 (40%)	0/9 (0%)
POLY-3 RATE (b)	4/10.00	4/10.00	0/1.33
POLY-3 PERCENT (g)	40%	40%	0%
TERMINAL (d)	4/10 (40%)	4/10 (40%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.647N	P=0.667	P=0.512N
POLY 1.5	P=0.522N	P=0.667	P=0.363N
POLY 6	P=0.667N	P=0.667	P=0.550N
COCH-ARM / FISHERS	P=0.049N*	P=0.675N	P=0.054N
MAX-ISO-POLY-3	P=0.528N	P=1.000	P=0.371N

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Lymph Node: Lumbar Hyperplasia Lymphoid</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/0 (0%)	0/0 (0%)	1/1 (100%)
POLY-3 RATE (b)	0/0.00	0/0.00	1/1.00
POLY-3 PERCENT (g)	0%	0%	100%
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	---	---	35
<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)

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Mammary Gland Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.33
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Nose Malformation</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.33
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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)

---

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas</b>			
<b>Infiltration Cellular Lymphocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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)

---

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas</b>			
<b>Vacuolization Cytoplasmic</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/10.00	1/2.33
POLY-3 PERCENT (g)	0%	0%	42.9%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	35
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.642	(e)	P=0.286
POLY 1.5	P=0.493	(e)	P=0.327
POLY 6	P=0.684	(e)	P=0.276
COCH-ARM / FISHERS	P=0.267	(e)	P=0.500
MAX-ISO-POLY-3	P=0.139	(e)	P=0.142

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pancreas: Acinus Degeneration</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	1/10.00	0/1.38
POLY-3 PERCENT (g)	0%	10%	0%
TERMINAL (d)	0/10 (0%)	1/10 (10%)	0/1 (0%)
FIRST INCIDENCE	---	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.513	P=0.500	(e)
POLY 1.5	P=0.549	P=0.500	(e)
POLY 6	P=0.507	P=0.500	(e)
COCH-ARM / FISHERS	P=0.733	P=0.500	(e)
MAX-ISO-POLY-3	P=0.596	P=0.159	(e)

---



Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Pituitary Gland: Pars Distalis Cyst</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	2/10 (20%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	2/10.00	0/1.33
POLY-3 PERCENT (g)	0%	20%	0%
TERMINAL (d)	0/10 (0%)	2/10 (20%)	0/1 (0%)
FIRST INCIDENCE	---	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.208	P=0.227	(e)
POLY 1.5	P=0.271	P=0.227	(e)
POLY 6	P=0.198	P=0.227	(e)
COCH-ARM / FISHERS	P=0.652	P=0.237	(e)
MAX-ISO-POLY-3	P=0.291	P=0.067	(e)

---

Experiment Number: 20702 - 01  
 Test Type: 90-DAY  
 Route: DOSED FEED  
 Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Usnea Lichen  
 CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
 Time Report Requested: 12:51:12  
 First Dose M/F: 02/14/09 / 02/14/09  
 Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
 TERMINAL SACRIFICE AT 14 WEEKS**

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thymus Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	8/10 (80%)
POLY-3 RATE (b)	0/10.00	0/10.00	8/9.05
POLY-3 PERCENT (g)	0%	0%	88.4%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (0%)
FIRST INCIDENCE	---	---	28
<b>STATISTICAL TESTS</b>			
POLY 3	P<0.001**	(e)	P<0.001**
POLY 1.5	P<0.001**	(e)	P<0.001**
POLY 6	P<0.001**	(e)	P<0.001**
COCH-ARM / FISHERS	P<0.001**	(e)	P<0.001**
MAX-ISO-POLY-3	P<0.001**	(e)	P<0.001**

Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
Time Report Requested: 12:51:12  
First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thymus Cyst</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.38
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thyroid Gland Cyst</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	1/10 (10%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	1/10.00	0/1.33
POLY-3 PERCENT (g)	0%	10%	0%
TERMINAL (d)	0/10 (0%)	1/10 (10%)	0/1 (0%)
FIRST INCIDENCE	---	95 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.513	P=0.500	(e)
POLY 1.5	P=0.546	P=0.500	(e)
POLY 6	P=0.508	P=0.500	(e)
COCH-ARM / FISHERS	P=0.721	P=0.500	(e)
MAX-ISO-POLY-3	P=0.595	P=0.159	(e)

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Thyroid Gland</b>			
<b>Ectopic Thymus</b>			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/10 (10%)	2/10 (20%)	1/9 (11%)
POLY-3 RATE (b)	1/10.00	2/10.00	1/2.31
POLY-3 PERCENT (g)	10%	20%	43.4%
TERMINAL (d)	1/10 (10%)	2/10 (20%)	0/1 (0%)
FIRST INCIDENCE	95 (T)	95 (T)	28
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.390	P=0.500	P=0.435
POLY 1.5	P=0.395	P=0.500	P=0.507
POLY 6	P=0.394	P=0.500	P=0.416
COCH-ARM / FISHERS	P=0.595	P=0.500	P=0.737
MAX-ISO-POLY-3	P=0.418	P=0.275	P=0.277

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Experiment Number: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
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First Dose M/F: 02/14/09 / 02/14/09  
Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Tissue NOS: Mediastinum Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/0 (0%)	0/0 (0%)	0/0 (0%)
POLY-3 RATE (b)	0/0.00	0/0.00	0/0.00
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Usnea Lichen  
CAS Number: USNEALICHEN

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Lab: NCTR

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

---

DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Urinary Bladder: Lumen Dilatation</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/9 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/1.33
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/1 (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: 20702 - 01  
Test Type: 90-DAY  
Route: DOSED FEED  
Species/Strain: RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Usnea Lichen  
CAS Number: USNEALICHEN

Date Report Requested: 12/03/2020  
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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(F 344/NCTR)  
TERMINAL SACRIFICE AT 14 WEEKS**

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DOSE	Females		
	Control 0 PPM	USNEA 360 PPM	USNEA 720 PPM
<b>Uterus: Lumen Dilatation</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/10 (20%)	3/10 (30%)	1/9 (11%)
POLY-3 RATE (b)	2/10.00	3/10.00	1/1.33
POLY-3 PERCENT (g)	20%	30%	75.1%
TERMINAL (d)	2/10 (20%)	3/10 (30%)	1/1 (100%)
FIRST INCIDENCE	95 (T)	95 (T)	95 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.438	P=0.500	P=0.438
POLY 1.5	P=0.445	P=0.500	P=0.555
POLY 6	P=0.446	P=0.500	P=0.408
COCH-ARM / FISHERS	P=0.434N	P=0.500	P=0.542N
MAX-ISO-POLY-3	P=0.459	P=0.311	P=0.311

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**Experiment Number:** 20702 - 01  
**Test Type:** 90-DAY  
**Route:** DOSED FEED  
**Species/Strain:** RATS/F 344/NCTR

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Usnea Lichen  
**CAS Number:** USNEALICHEN

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**Lab:** NCTR

## **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 \*\*\*