

**Experiment Number:** 20403 - 01  
**Test Type:** CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** RATS/HSD

**P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS**  
Zinc Carbonate, Basic  
**CAS Number:** 5263-02-5

**Date Report Requested:** 11/22/2015  
**Time Report Requested:** 17:44:41  
**First Dose M/F:** 09/03/09 / 09/04/09  
**Lab:** BAT

Custom Report - Zinc Excess

<b>NTP Study Number:</b>	C20403		
<b>Lock Date:</b>	04/05/2013		
<b>Cage Range:</b>	ALL		
<b>Date Range:</b>	ALL		
<b>Reasons For Removal:</b>	25021 TSAC	25020 NATD	25019 MSAC
<b>Removal Date Range:</b>	ALL		
<b>Treatment Groups:</b>	Include 001 Control (38ppm) Include 008 250ppmModZnExc	Include 002 Control (38ppm) Include 009 500ppm ZnExc	Include 007 250ppmModZnExc Include 010 500ppm ZnExc
<b>Study Gender:</b>	Both		
<b>TDMSE Version:</b>	2.5.0.0_sfh		
<b>PWG Approval Date:</b>	09/08/2015		

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**SUMMARY OF STATISTICALLY SIGNIFICANT ( $P \leq .05$ ) RESULTS IN THE ANALYSIS OF ZINC CARBONATE, BASIC**

**MALE RATS**

**Organ**

Blood Vessel  
Bone  
Heart  
Heart: Atrium  
Islets, Pancreatic  
Kidney  
  
Liver  
Liver: Bile Duct  
Liver: Hepatocyte  
Lung  
Lymph Node, Mesenteric  
Nose  
Pancreas: Acinus  
Skin  
Spleen

**FEMALE RATS**

**Organ**

Liver  
Ovary  
Pancreas: Acinus  
Spleen  
Thyroid Gland: C-Cell

**Morphology**

Mineralization  
Fibrous Osteodystrophy  
Cardiomyopathy  
Thrombosis  
Hyperplasia  
Cyst  
Infarct Chronic  
Eosinophilic Focus  
Hyperplasia  
Necrosis  
Inflammation  
Hyperplasia  
Inflammation  
Atrophy  
Inflammation  
Pigmentation Hemosiderin

**Morphology**

Mixed Cell Focus  
Cyst  
Atrophy  
Hematopoietic Cell Proliferation  
Hyperplasia

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Degeneration Cystic</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	0/38.48	0/39.26
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (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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---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	7/50 (14%)	5/50 (10%)	5/50 (10%)
POLY-3 RATE (b)	7/39.87	5/38.95	5/39.73
POLY-3 PERCENT (g)	17.6%	12.8%	12.6%
TERMINAL (d)	3/18 (17%)	2/21 (10%)	3/20 (15%)
FIRST INCIDENCE	586	671	660
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.317N	P=0.393N	P=0.379N
POLY 1.5	P=0.320N	P=0.389N	P=0.382N
POLY 6	P=0.307N	P=0.391N	P=0.368N
COCH-ARM / FISHERS	P=0.318N	P=0.380N	P=0.380N
MAX-ISO-POLY-3	P=0.366N	P=0.282N	P=0.268N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Thrombosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	1/39.27	0/39.26
POLY-3 PERCENT (g)	0%	2.6%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	---	436	---
<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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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Medulla Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	22/50 (44%)	19/50 (38%)	16/50 (32%)
POLY-3 RATE (b)	22/42.60	19/41.78	16/40.70
POLY-3 PERCENT (g)	51.7%	45.5%	39.3%
TERMINAL (d)	9/18 (50%)	8/21 (38%)	9/20 (45%)
FIRST INCIDENCE	496	363	599
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.147N	P=0.359N	P=0.173N
POLY 1.5	P=0.140N	P=0.354N	P=0.165N
POLY 6	P=0.148N	P=0.348N	P=0.175N
COCH-ARM / FISHERS	P=0.129N	P=0.342N	P=0.151N
MAX-ISO-POLY-3	P=0.176N	P=0.282N	P=0.127N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Medulla: Bilateral Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	6/50 (12%)	4/50 (8%)	5/50 (10%)
POLY-3 RATE (b)	6/39.85	4/39.29	5/39.64
POLY-3 PERCENT (g)	15.1%	10.2%	12.6%
TERMINAL (d)	3/18 (17%)	1/21 (5%)	3/20 (15%)
FIRST INCIDENCE	537	635	649
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.436N	P=0.376N	P=0.504N
POLY 1.5	P=0.438N	P=0.376N	P=0.505N
POLY 6	P=0.426N	P=0.367N	P=0.492N
COCH-ARM / FISHERS	P=0.434N	P=0.370N	P=0.500N
MAX-ISO-POLY-3	P=0.431N	P=0.258N	P=0.375N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Blood Vessel Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	24/50 (48%)	27/50 (54%)	16/50 (32%)
POLY-3 RATE (b)	24/43.56	27/43.83	16/40.20
POLY-3 PERCENT (g)	55.1%	61.6%	39.8%
TERMINAL (d)	9/18 (50%)	11/21 (52%)	8/20 (40%)
FIRST INCIDENCE	496	363	669
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.103N	P=0.339	P=0.110N
POLY 1.5	P=0.085N	P=0.340	P=0.094N
POLY 6	P=0.124N	P=0.359	P=0.127N
COCH-ARM / FISHERS	P=0.066N	P=0.345	P=0.076N
MAX-ISO-POLY-3	P=0.059N	P=0.262	P=0.080N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Blood Vessel Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	3/39.75	0/38.48	0/39.26
POLY-3 PERCENT (g)	7.6%	0%	0%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	496	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.035N*	P=0.123N	P=0.120N
POLY 1.5	P=0.036N*	P=0.122N	P=0.120N
POLY 6	P=0.034N*	P=0.122N	P=0.116N
COCH-ARM / FISHERS	P=0.037N*	P=0.121N	P=0.121N
MAX-ISO-POLY-3	P=0.020N*	P=0.042N*	P=0.039N*

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone Marrow Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	1/38.53	1/39.23	2/40.14
POLY-3 PERCENT (g)	2.6%	2.6%	5%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	1/20 (5%)
FIRST INCIDENCE	701	461	362
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.392	P=0.757N	P=0.514
POLY 1.5	P=0.386	P=0.759N	P=0.508
POLY 6	P=0.404	P=0.752N	P=0.527
COCH-ARM / FISHERS	P=0.378	P=0.753N	P=0.500
MAX-ISO-POLY-3	P=0.392	P=0.494N	P=0.295

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone Marrow Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	4/50 (8%)	1/50 (2%)	1/50 (2%)
POLY-3 RATE (b)	4/39.14	1/39.30	1/39.57
POLY-3 PERCENT (g)	10.2%	2.5%	2.5%
TERMINAL (d)	2/18 (11%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	538	420	649
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.098N	P=0.175N	P=0.173N
POLY 1.5	P=0.099N	P=0.178N	P=0.177N
POLY 6	P=0.093N	P=0.170N	P=0.164N
COCH-ARM / FISHERS	P=0.101N	P=0.181N	P=0.181N
MAX-ISO-POLY-3	P=0.081N	P=0.081N	P=0.081N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone</b>			
<b>Fibrous Osteodystrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	3/39.65	1/38.81	0/39.26
POLY-3 PERCENT (g)	7.6%	2.6%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	514	644	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.060N	P=0.312N	P=0.119N
POLY 1.5	P=0.060N	P=0.310N	P=0.120N
POLY 6	P=0.058N	P=0.309N	P=0.117N
COCH-ARM / FISHERS	P=0.060N	P=0.309N	P=0.121N
MAX-ISO-POLY-3	P=0.041N*	P=0.161N	P=0.039N*

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone: Maxilla</b>			
<b>Fibrosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	0/38.48	0/39.26
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (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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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Epididymis Degeneration</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	2/39.01	0/39.26
POLY-3 PERCENT (g)	0%	5.1%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	---	645	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.662N	P=0.240	(e)
POLY 1.5	P=0.667N	P=0.238	(e)
POLY 6	P=0.650N	P=0.247	(e)
COCH-ARM / FISHERS	P=0.669	P=0.247	(e)
MAX-ISO-POLY-3	P=0.267N	P=0.079	(e)

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Anterior Chamber			
Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/38.83	0/38.48	0/38.86
POLY-3 PERCENT (g)	5.2%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	615	---	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.095N	P=0.238N	P=0.236N
POLY 1.5	P=0.096N	P=0.239N	P=0.240N
POLY 6	P=0.094N	P=0.236N	P=0.229N
COCH-ARM / FISHERS	P=0.097N	P=0.247N	P=0.253N
MAX-ISO-POLY-3	P=0.052N	P=0.077N	P=0.076N

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TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Bilateral, Cornea Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/38.83	0/38.48	0/38.86
POLY-3 PERCENT (g)	5.2%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	615	---	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.095N	P=0.238N	P=0.236N
POLY 1.5	P=0.096N	P=0.239N	P=0.240N
POLY 6	P=0.094N	P=0.236N	P=0.229N
COCH-ARM / FISHERS	P=0.097N	P=0.247N	P=0.253N
MAX-ISO-POLY-3	P=0.052N	P=0.077N	P=0.076N

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DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Bilateral, Cornea Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	3/50 (6%)	1/49 (2%)
POLY-3 RATE (b)	1/38.40	3/38.85	1/38.94
POLY-3 PERCENT (g)	2.6%	7.7%	2.6%
TERMINAL (d)	1/18 (6%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	734 (T)	644	715
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.602N	P=0.308	P=0.758N
POLY 1.5	P=0.611N	P=0.306	P=0.760
POLY 6	P=0.584N	P=0.318	P=0.749N
COCH-ARM / FISHERS	P=0.603	P=0.309	P=0.747
MAX-ISO-POLY-3	P=0.400N	P=0.157	P=0.495N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	2/50 (4%)	1/49 (2%)
POLY-3 RATE (b)	2/38.83	2/39.78	1/39.03
POLY-3 PERCENT (g)	5.2%	5%	2.6%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	615	330	691
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.389N	P=0.686N	P=0.498N
POLY 1.5	P=0.394N	P=0.690N	P=0.504N
POLY 6	P=0.377N	P=0.678N	P=0.486N
COCH-ARM / FISHERS	P=0.397N	P=0.691N	P=0.508N
MAX-ISO-POLY-3	P=0.400N	P=0.489N	P=0.280N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea			
Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	3/50 (6%)	2/49 (4%)
POLY-3 RATE (b)	1/38.40	3/38.85	2/39.00
POLY-3 PERCENT (g)	2.6%	7.7%	5.1%
TERMINAL (d)	1/18 (6%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	734 (T)	644	715
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.410	P=0.308	P=0.505
POLY 1.5	P=0.400	P=0.306	P=0.498
POLY 6	P=0.434	P=0.318	P=0.521
COCH-ARM / FISHERS	P=0.391	P=0.309	P=0.492
MAX-ISO-POLY-3	P=0.317	P=0.157	P=0.287

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea Necrosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	4/50 (8%)	0/49 (0%)
POLY-3 RATE (b)	1/38.42	4/40.15	0/38.86
POLY-3 PERCENT (g)	2.6%	10%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	729	330	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.378N	P=0.190	P=0.498N
POLY 1.5	P=0.389N	P=0.185	P=0.501N
POLY 6	P=0.357N	P=0.203	P=0.490N
COCH-ARM / FISHERS	P=0.397N	P=0.181	P=0.505N
MAX-ISO-POLY-3	P=0.114N	P=0.095	P=0.159N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Heart Cardiomyopathy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	42/50 (84%)	35/50 (70%)	32/50 (64%)
POLY-3 RATE (b)	42/47.21	35/45.36	32/44.67
POLY-3 PERCENT (g)	89%	77.2%	71.6%
TERMINAL (d)	15/18 (83%)	15/21 (71%)	11/20 (55%)
FIRST INCIDENCE	496	363	355
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.019N*	P=0.090N	P=0.024N*
POLY 1.5	P=0.015N*	P=0.076N	P=0.018N*
POLY 6	P=0.024N*	P=0.112N	P=0.032N*
COCH-ARM / FISHERS	P=0.017N*	P=0.077N	P=0.020N*
MAX-ISO-POLY-3	P=0.020N*	P=0.053N	P=0.013N*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Heart Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	2/39.75	1/38.87	0/39.26
POLY-3 PERCENT (g)	5%	2.6%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	496	622	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.144N	P=0.508N	P=0.239N
POLY 1.5	P=0.145N	P=0.506N	P=0.240N
POLY 6	P=0.141N	P=0.504N	P=0.235N
COCH-ARM / FISHERS	P=0.142N	P=0.500N	P=0.247N
MAX-ISO-POLY-3	P=0.107N	P=0.288N	P=0.078N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Heart: Atrium Thrombosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	3/50 (6%)	0/50 (0%)
POLY-3 RATE (b)	3/39.16	3/39.20	0/39.26
POLY-3 PERCENT (g)	7.7%	7.7%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	611	593	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.098N	P=0.663N	P=0.117N
POLY 1.5	P=0.100N	P=0.662	P=0.118N
POLY 6	P=0.094N	P=0.656N	P=0.114N
COCH-ARM / FISHERS	P=0.101N	P=0.661N	P=0.121N
MAX-ISO-POLY-3	P=0.082N	P=0.499N	P=0.037N*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Islets, Pancreatic Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	0/49 (0%)	4/49 (8%)
POLY-3 RATE (b)	1/38.73	0/37.72	4/39.64
POLY-3 PERCENT (g)	2.6%	0%	10.1%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	1/20 (5%)
FIRST INCIDENCE	642	---	642
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.080	P=0.505N	P=0.184
POLY 1.5	P=0.079	P=0.505N	P=0.178
POLY 6	P=0.084	P=0.502N	P=0.195
COCH-ARM / FISHERS	P=0.079	P=0.505N	P=0.175
MAX-ISO-POLY-3	P=0.036*	P=0.164N	P=0.090

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Kidney Cyst			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	4/50 (8%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	4/39.48	0/39.26
POLY-3 PERCENT (g)	0%	10.1%	0%
TERMINAL (d)	0/18 (0%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	---	636	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.612N	P=0.063	(e)
POLY 1.5	P=0.620N	P=0.061	(e)
POLY 6	P=0.592N	P=0.068	(e)
COCH-ARM / FISHERS	P=0.622	P=0.059	(e)
MAX-ISO-POLY-3	P=0.144N	P=0.022*	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Kidney Infarct Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY-3 RATE (b)	0/38.40	0/38.48	3/39.63
POLY-3 PERCENT (g)	0%	0%	7.6%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	2/20 (10%)
FIRST INCIDENCE	---	---	628
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.036*	(e)	P=0.123
POLY 1.5	P=0.036*	(e)	P=0.121
POLY 6	P=0.038*	(e)	P=0.130
COCH-ARM / FISHERS	P=0.037*	(e)	P=0.121
MAX-ISO-POLY-3	P=0.022*	(e)	P=0.042*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Kidney Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/38.40	0/38.48	0/39.26
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Kidney</b>			
<b>Nephropathy</b>			
<b>LESION RATES</b>			
OVERALL (a)	49/50 (98%)	49/50 (98%)	49/50 (98%)
POLY-3 RATE (b)	49/49.29	49/49.79	49/49.65
POLY-3 PERCENT (g)	99.4%	98.4%	98.7%
TERMINAL (d)	18/18 (100%)	21/21 (100%)	20/20 (100%)
FIRST INCIDENCE	186	330	355
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.567N	P=0.729N	P=0.814N
POLY 1.5	P=0.588N	P=0.737N	P=0.774N
POLY 6	P=0.604N	P=0.776N	P=0.934N
COCH-ARM / FISHERS	P=0.640	P=0.753N	P=0.753N
MAX-ISO-POLY-3	P=0.436N	P=0.284N	P=0.312N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Clear Cell Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	18/50 (36%)	21/50 (42%)	23/46 (50%)
POLY-3 RATE (b)	18/39.70	21/39.17	23/38.54
POLY-3 PERCENT (g)	45.3%	53.6%	59.7%
TERMINAL (d)	14/18 (78%)	18/21 (86%)	18/20 (90%)
FIRST INCIDENCE	552	615	526
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.109	P=0.295	P=0.134
POLY 1.5	P=0.101	P=0.312	P=0.123
POLY 6	P=0.139	P=0.290	P=0.171
COCH-ARM / FISHERS	P=0.100	P=0.341	P=0.119
MAX-ISO-POLY-3	P=0.120	P=0.221	P=0.090

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Eosinophilic Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	4/50 (8%)	1/50 (2%)	0/46 (0%)
POLY-3 RATE (b)	4/38.94	1/38.48	0/36.74
POLY-3 PERCENT (g)	10.3%	2.6%	0%
TERMINAL (d)	2/18 (11%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	615	734 (T)	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.027N*	P=0.180N	P=0.066N
POLY 1.5	P=0.028N*	P=0.181N	P=0.069N
POLY 6	P=0.025N*	P=0.176N	P=0.062N
COCH-ARM / FISHERS	P=0.029N*	P=0.181N	P=0.069N
MAX-ISO-POLY-3	P=0.018N*	P=0.085N	P=0.022N*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Fatty Change			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	5/50 (10%)	2/50 (4%)	4/46 (9%)
POLY-3 RATE (b)	5/39.83	2/38.93	4/37.06
POLY-3 PERCENT (g)	12.6%	5.1%	10.8%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	3/20 (15%)
FIRST INCIDENCE	552	671	645
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.465N	P=0.223N	P=0.546N
POLY 1.5	P=0.468N	P=0.221N	P=0.549N
POLY 6	P=0.458N	P=0.221N	P=0.536N
COCH-ARM / FISHERS	P=0.469N	P=0.218N	P=0.553N
MAX-ISO-POLY-3	P=0.341N	P=0.126N	P=0.405N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Mixed Cell Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/46 (0%)
POLY-3 RATE (b)	0/38.40	1/38.48	0/36.74
POLY-3 PERCENT (g)	0%	2.6%	0%
TERMINAL (d)	0/18 (0%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	---	734 (T)	---
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Bile Duct Hyperplasia			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	3/50 (6%)	0/46 (0%)
POLY-3 RATE (b)	0/38.40	3/38.72	0/36.74
POLY-3 PERCENT (g)	0%	7.8%	0%
TERMINAL (d)	0/18 (0%)	2/21 (10%)	0/20 (0%)
FIRST INCIDENCE	---	671	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.644	P=0.119	(e)
POLY 1.5	P=0.632	P=0.118	(e)
POLY 6	P=0.628N	P=0.123	(e)
COCH-ARM / FISHERS	P=0.618	P=0.121	(e)
MAX-ISO-POLY-3	P=0.191	P=0.038*	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Hepatocyte Necrosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	4/50 (8%)	1/50 (2%)	0/46 (0%)
POLY-3 RATE (b)	4/40.14	1/38.53	0/36.74
POLY-3 PERCENT (g)	10%	2.6%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	546	723	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.028N*	P=0.190N	P=0.071N
POLY 1.5	P=0.028N*	P=0.186N	P=0.071N
POLY 6	P=0.027N*	P=0.192N	P=0.069N
COCH-ARM / FISHERS	P=0.029N*	P=0.181N	P=0.069N
MAX-ISO-POLY-3	P=0.021N*	P=0.094N	P=0.026N*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Hepatocyte Vacuolization Cytoplasmic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/50 (2%)	1/46 (2%)
POLY-3 RATE (b)	0/38.40	1/38.83	1/37.05
POLY-3 PERCENT (g)	0%	2.6%	2.7%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	---	636	649
<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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Lung Infiltration Cellular Histiocyte			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	18/50 (36%)	14/50 (28%)	14/50 (28%)
POLY-3 RATE (b)	18/41.35	14/40.61	14/40.34
POLY-3 PERCENT (g)	43.5%	34.5%	34.7%
TERMINAL (d)	9/18 (50%)	10/21 (48%)	9/20 (45%)
FIRST INCIDENCE	496	420	593
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.231N	P=0.264N	P=0.272N
POLY 1.5	P=0.232N	P=0.263N	P=0.271N
POLY 6	P=0.215N	P=0.256N	P=0.254N
COCH-ARM / FISHERS	P=0.224N	P=0.260N	P=0.260N
MAX-ISO-POLY-3	P=0.277N	P=0.196N	P=0.204N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lung Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	10/50 (20%)	4/50 (8%)
POLY-3 RATE (b)	3/39.43	10/41.18	4/39.49
POLY-3 PERCENT (g)	7.6%	24.3%	10.1%
TERMINAL (d)	0/18 (0%)	1/21 (5%)	2/20 (10%)
FIRST INCIDENCE	496	436	691
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.437	P=0.038*	P=0.501
POLY 1.5	P=0.433	P=0.036*	P=0.498
POLY 6	P=0.458	P=0.045*	P=0.513
COCH-ARM / FISHERS	P=0.437	P=0.036*	P=0.500
MAX-ISO-POLY-3	P=0.144	P=0.021*	P=0.346

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/49 (4%)	2/50 (4%)	2/48 (4%)
POLY-3 RATE (b)	2/38.77	2/39.11	2/39.44
POLY-3 PERCENT (g)	5.2%	5.1%	5.1%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	611	622	405
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.596N	P=0.692N	P=0.689N
POLY 1.5	P=0.601N	P=0.691N	P=0.694N
POLY 6	P=0.586N	P=0.688N	P=0.679N
COCH-ARM / FISHERS	P=0.593	P=0.684N	P=0.684
MAX-ISO-POLY-3	P=0.658N	P=0.496N	P=0.492N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	15/49 (31%)	10/50 (20%)	11/48 (23%)
POLY-3 RATE (b)	15/40.81	10/40.86	11/39.69
POLY-3 PERCENT (g)	36.8%	24.5%	27.7%
TERMINAL (d)	6/18 (33%)	6/21 (29%)	7/20 (35%)
FIRST INCIDENCE	488	420	355
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.215N	P=0.163N	P=0.261N
POLY 1.5	P=0.216N	P=0.163N	P=0.261N
POLY 6	P=0.213N	P=0.161N	P=0.260N
COCH-ARM / FISHERS	P=0.221N	P=0.163N	P=0.266N
MAX-ISO-POLY-3	P=0.201N	P=0.110N	P=0.191N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Infiltration Cellular Plasma Cell</b>			
<b>LESION RATES</b>			
OVERALL (a)	12/49 (24%)	12/50 (24%)	10/48 (21%)
POLY-3 RATE (b)	12/39.01	12/40.66	10/39.78
POLY-3 PERCENT (g)	30.8%	29.5%	25.1%
TERMINAL (d)	8/18 (44%)	7/21 (33%)	5/20 (25%)
FIRST INCIDENCE	538	363	526
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.332N	P=0.550N	P=0.379N
POLY 1.5	P=0.356N	P=0.562N	P=0.403N
POLY 6	P=0.285N	P=0.515N	P=0.331N
COCH-ARM / FISHERS	P=0.380N	P=0.570N	P=0.426N
MAX-ISO-POLY-3	P=0.403N	P=0.450N	P=0.290N

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/49 (0%)
POLY-3 RATE (b)	2/39.05	1/38.80	0/39.14
POLY-3 PERCENT (g)	5.1%	2.6%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	611	645	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.142N	P=0.502N	P=0.236N
POLY 1.5	P=0.144N	P=0.502N	P=0.239N
POLY 6	P=0.139N	P=0.498N	P=0.231N
COCH-ARM / FISHERS	P=0.145N	P=0.500N	P=0.253N
MAX-ISO-POLY-3	P=0.104N	P=0.282N	P=0.076N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	2/50 (4%)	4/49 (8%)
POLY-3 RATE (b)	0/38.40	2/39.85	4/39.67
POLY-3 PERCENT (g)	0%	5%	10.1%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	2/20 (10%)
FIRST INCIDENCE	---	420	597
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.038*	P=0.245	P=0.063
POLY 1.5	P=0.036*	P=0.241	P=0.061
POLY 6	P=0.042*	P=0.253	P=0.069
COCH-ARM / FISHERS	P=0.035*	P=0.247	P=0.056
MAX-ISO-POLY-3	P=0.030*	P=0.083	P=0.023*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Infiltration Cellular Histiocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/38.40	0/38.48	0/39.14
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (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: 20403 - 01

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Route: DOSED FEED

Species/Strain: RATS/HSD

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Lymph Node: Mediastinal Hemorrhage			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/6 (33%)	1/3 (33%)	0/2 (0%)
POLY-3 RATE (b)	2/5.53	1/2.79	0/1.98
POLY-3 PERCENT (g)	36.2%	35.9%	0%
TERMINAL (d)	0/0 (0%)	0/1 (0%)	0/1 (0%)
FIRST INCIDENCE	496	436	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.357N	P=0.752N	P=0.480N
POLY 1.5	P=0.366N	P=0.749N	P=0.490N
POLY 6	P=0.338N	P=0.757N	P=0.461N
COCH-ARM / FISHERS	P=0.360N	P=0.762	P=0.536N
MAX-ISO-POLY-3	P=0.320N	P=0.497N	P=0.217N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Mammary Gland Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/48 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/38.40	0/36.83	0/38.26
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/18 (0%)	0/20 (0%)	0/19 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Nose			
Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	8/50 (16%)	2/50 (4%)	4/49 (8%)
POLY-3 RATE (b)	8/40.38	2/38.48	4/40.13
POLY-3 PERCENT (g)	19.8%	5.2%	10%
TERMINAL (d)	3/18 (17%)	2/21 (10%)	0/20 (0%)
FIRST INCIDENCE	496	734 (T)	597
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.111N	P=0.050N*	P=0.175N
POLY 1.5	P=0.115N	P=0.049N*	P=0.182N
POLY 6	P=0.104N	P=0.051N	P=0.161N
COCH-ARM / FISHERS	P=0.120N	P=0.046N*	P=0.188N
MAX-ISO-POLY-3	P=0.055N	P=0.026N*	P=0.106N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Nose: Respiratory Epithelium Hyperplasia			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	2/50 (4%)	1/49 (2%)
POLY-3 RATE (b)	0/38.40	2/38.79	1/39.45
POLY-3 PERCENT (g)	0%	5.2%	2.5%
TERMINAL (d)	0/18 (0%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	---	648	649
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.377	P=0.239	P=0.505
POLY 1.5	P=0.366	P=0.237	P=0.501
POLY 6	P=0.397	P=0.244	P=0.514
COCH-ARM / FISHERS	P=0.355	P=0.247	P=0.495
MAX-ISO-POLY-3	P=0.204	P=0.077	P=0.166

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pancreas: Acinus Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/49 (6%)	3/48 (6%)	13/48 (27%)
POLY-3 RATE (b)	3/38.13	3/37.89	13/39.04
POLY-3 PERCENT (g)	7.9%	7.9%	33.3%
TERMINAL (d)	2/18 (11%)	1/21 (5%)	10/20 (50%)
FIRST INCIDENCE	693	565	649
<b>STATISTICAL TESTS</b>			
POLY 3	P<0.001**	P=0.661	P=0.005**
POLY 1.5	P<0.001**	P=0.655	P=0.005**
POLY 6	P<0.001**	P=0.653N	P=0.005**
COCH-ARM / FISHERS	P=0.002**	P=0.651	P=0.005**
MAX-ISO-POLY-3	P<0.001**	P=0.496	P=0.002**

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pancreas: Acinus Basophilic Focus</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/49 (2%)	0/48 (0%)	2/48 (4%)
POLY-3 RATE (b)	1/37.97	0/37.11	2/38.26
POLY-3 PERCENT (g)	2.6%	0%	5.2%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	2/20 (10%)
FIRST INCIDENCE	734 (T)	---	734 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.361	P=0.505N	P=0.503
POLY 1.5	P=0.358	P=0.505N	P=0.498
POLY 6	P=0.367	P=0.500N	P=0.513
COCH-ARM / FISHERS	P=0.355	P=0.505N	P=0.492
MAX-ISO-POLY-3	P=0.204	P=0.163N	P=0.283

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pancreas: Acinus Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	23/49 (47%)	21/48 (44%)	28/48 (58%)
POLY-3 RATE (b)	23/41.62	21/39.22	28/40.74
POLY-3 PERCENT (g)	55.3%	53.5%	68.7%
TERMINAL (d)	10/18 (56%)	14/21 (67%)	17/20 (85%)
FIRST INCIDENCE	537	593	412
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.114	P=0.528N	P=0.135
POLY 1.5	P=0.132	P=0.500N	P=0.155
POLY 6	P=0.095	P=0.547N	P=0.113
COCH-ARM / FISHERS	P=0.155	P=0.456N	P=0.179
MAX-ISO-POLY-3	P=0.109	P=0.435N	P=0.091

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Parathyroid Gland Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	6/47 (13%)	6/40 (15%)	5/42 (12%)
POLY-3 RATE (b)	6/37.81	6/31.57	5/33.02
POLY-3 PERCENT (g)	15.9%	19%	15.1%
TERMINAL (d)	0/17 (0%)	1/16 (6%)	2/16 (13%)
FIRST INCIDENCE	514	622	649
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.539N	P=0.490	P=0.596N
POLY 1.5	P=0.531N	P=0.494	P=0.589N
POLY 6	P=0.544N	P=0.496	P=0.601N
COCH-ARM / FISHERS	P=0.520N	P=0.502	P=0.580N
MAX-ISO-POLY-3	P=0.554N	P=0.370	P=0.467N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pituitary Gland: Pars Distalis Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	12/50 (24%)	13/50 (26%)	15/49 (31%)
POLY-3 RATE (b)	12/39.88	13/40.56	15/40.65
POLY-3 PERCENT (g)	30.1%	32.1%	36.9%
TERMINAL (d)	6/18 (33%)	7/21 (33%)	7/20 (35%)
FIRST INCIDENCE	553	565	412
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.294	P=0.521	P=0.338
POLY 1.5	P=0.278	P=0.506	P=0.319
POLY 6	P=0.334	P=0.561	P=0.382
COCH-ARM / FISHERS	P=0.265	P=0.500	P=0.304
MAX-ISO-POLY-3	P=0.359	P=0.422	P=0.258

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Prostate: Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/38.89	0/38.48	0/39.26
POLY-3 PERCENT (g)	5.1%	0%	0%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	586	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.094N	P=0.239N	P=0.234N
POLY 1.5	P=0.094N	P=0.239N	P=0.237N
POLY 6	P=0.093N	P=0.236N	P=0.229N
COCH-ARM / FISHERS	P=0.095N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.052N	P=0.077N	P=0.075N

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Experiment Number: 20403 - 01  
Test Type: CHRONIC  
Route: DOSED FEED  
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Zinc Carbonate, Basic  
CAS Number: 5263-02-5

Date Report Requested: 11/22/2015  
Time Report Requested: 17:44:41  
First Dose M/F: 09/03/09 / 09/04/09  
Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Skin</b>			
Cyst Epithelial Inclusion			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	0/50 (0%)	2/50 (4%)
POLY-3 RATE (b)	1/38.40	0/38.48	2/39.72
POLY-3 PERCENT (g)	2.6%	0%	5%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	1/20 (5%)
FIRST INCIDENCE	734 (T)	---	597
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.367	P=0.500N	P=0.512
POLY 1.5	P=0.363	P=0.500N	P=0.505
POLY 6	P=0.376	P=0.496N	P=0.527
COCH-ARM / FISHERS	P=0.360	P=0.500N	P=0.500
MAX-ISO-POLY-3	P=0.212	P=0.158N	P=0.293

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Skin Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	4/50 (8%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	4/38.40	1/38.48	0/39.26
POLY-3 PERCENT (g)	10.4%	2.6%	0%
TERMINAL (d)	4/18 (22%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	734 (T)	734 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.023N*	P=0.176N	P=0.056N
POLY 1.5	P=0.024N*	P=0.178N	P=0.059N
POLY 6	P=0.021N*	P=0.168N	P=0.051N
COCH-ARM / FISHERS	P=0.026N*	P=0.181N	P=0.059N
MAX-ISO-POLY-3	P=0.015N*	P=0.081N	P=0.019N*

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin			
Ulcer			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	3/38.91	1/38.72	2/39.63
POLY-3 PERCENT (g)	7.7%	2.6%	5.1%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	1/20 (5%)
FIRST INCIDENCE	586	671	628
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.394N	P=0.306N	P=0.492N
POLY 1.5	P=0.398N	P=0.307N	P=0.497N
POLY 6	P=0.386N	P=0.299N	P=0.477N
COCH-ARM / FISHERS	P=0.399N	P=0.309N	P=0.500N
MAX-ISO-POLY-3	P=0.306N	P=0.154N	P=0.317N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Skin: Epidermis Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	2/38.57	1/38.48	0/39.26
POLY-3 PERCENT (g)	5.2%	2.6%	0%
TERMINAL (d)	1/18 (6%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	691	734 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.139N	P=0.501N	P=0.232N
POLY 1.5	P=0.141N	P=0.502N	P=0.235N
POLY 6	P=0.135N	P=0.495N	P=0.226N
COCH-ARM / FISHERS	P=0.142N	P=0.500N	P=0.247N
MAX-ISO-POLY-3	P=0.103N	P=0.280N	P=0.075N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin: Hair Follicle Cyst			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	5/50 (10%)	2/50 (4%)
POLY-3 RATE (b)	3/38.59	5/39.19	2/39.45
POLY-3 PERCENT (g)	7.8%	12.8%	5.1%
TERMINAL (d)	2/18 (11%)	3/21 (14%)	0/20 (0%)
FIRST INCIDENCE	684	593	704
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.406N	P=0.363	P=0.490N
POLY 1.5	P=0.415N	P=0.358	P=0.496N
POLY 6	P=0.385N	P=0.379	P=0.474N
COCH-ARM / FISHERS	P=0.421N	P=0.357	P=0.500N
MAX-ISO-POLY-3	P=0.289N	P=0.237	P=0.315N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

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DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Spleen</b>			
<b>Hematopoietic Cell Proliferation</b>			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	27/50 (54%)	26/48 (54%)	24/45 (53%)
POLY-3 RATE (b)	27/43.76	26/40.80	24/40.17
POLY-3 PERCENT (g)	61.7%	63.7%	59.7%
TERMINAL (d)	13/18 (72%)	16/21 (76%)	12/20 (60%)
FIRST INCIDENCE	537	420	412
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.473N	P=0.514	P=0.517N
POLY 1.5	P=0.490N	P=0.541	P=0.532N
POLY 6	P=0.434N	P=0.487	P=0.483N
COCH-ARM / FISHERS	P=0.516N	P=0.574	P=0.556N
MAX-ISO-POLY-3	P=0.529N	P=0.420	P=0.423N

---

Experiment Number: 20403 - 01

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Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Spleen Pigmentation Hemosiderin			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	44/50 (88%)	40/48 (83%)	34/45 (76%)
POLY-3 RATE (b)	44/47.85	40/45.78	34/42.57
POLY-3 PERCENT (g)	92%	87.4%	79.9%
TERMINAL (d)	17/18 (94%)	18/21 (86%)	17/20 (85%)
FIRST INCIDENCE	186	330	355
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.048N*	P=0.336N	P=0.065N
POLY 1.5	P=0.056N	P=0.357N	P=0.075N
POLY 6	P=0.045N*	P=0.283N	P=0.059N
COCH-ARM / FISHERS	P=0.073N	P=0.355N	P=0.095N
MAX-ISO-POLY-3	P=0.048N*	P=0.215N	P=0.036N*

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Spleen: Lymphoid Follicle Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	6/50 (12%)	3/48 (6%)	4/45 (9%)
POLY-3 RATE (b)	6/40.66	3/38.21	4/37.92
POLY-3 PERCENT (g)	14.8%	7.9%	10.6%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	514	565	405
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.337N	P=0.271N	P=0.413N
POLY 1.5	P=0.345N	P=0.270N	P=0.423N
POLY 6	P=0.324N	P=0.263N	P=0.395N
COCH-ARM / FISHERS	P=0.354N	P=0.264N	P=0.439N
MAX-ISO-POLY-3	P=0.303N	P=0.173N	P=0.290N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Spleen: Lymphoid Follicle Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	7/50 (14%)	8/48 (17%)	3/45 (7%)
POLY-3 RATE (b)	7/40.53	8/38.88	3/37.13
POLY-3 PERCENT (g)	17.3%	20.6%	8.1%
TERMINAL (d)	0/18 (0%)	4/21 (19%)	1/20 (5%)
FIRST INCIDENCE	552	436	649
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.171N	P=0.464	P=0.191N
POLY 1.5	P=0.178N	P=0.465	P=0.196N
POLY 6	P=0.162N	P=0.468	P=0.183N
COCH-ARM / FISHERS	P=0.187N	P=0.465	P=0.205N
MAX-ISO-POLY-3	P=0.131N	P=0.353	P=0.116N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Forestomach Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/39.75	0/38.48	0/39.09
POLY-3 PERCENT (g)	5%	0%	0%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	496	---	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.096N	P=0.244N	P=0.240N
POLY 1.5	P=0.096N	P=0.242N	P=0.242N
POLY 6	P=0.095N	P=0.243N	P=0.236N
COCH-ARM / FISHERS	P=0.097N	P=0.247N	P=0.253N
MAX-ISO-POLY-3	P=0.054N	P=0.082N	P=0.078N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

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DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Stomach, Forestomach Ulcer			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	2/50 (4%)	2/49 (4%)
POLY-3 RATE (b)	3/38.82	2/39.19	2/39.46
POLY-3 PERCENT (g)	7.7%	5.1%	5.1%
TERMINAL (d)	1/18 (6%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	656	551	649
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.402N	P=0.496N	P=0.492N
POLY 1.5	P=0.409N	P=0.499N	P=0.501N
POLY 6	P=0.389N	P=0.485N	P=0.476N
COCH-ARM / FISHERS	P=0.415N	P=0.500N	P=0.510N
MAX-ISO-POLY-3	P=0.432N	P=0.319N	P=0.318N

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Forestomach: Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	11/50 (22%)	14/50 (28%)	7/49 (14%)
POLY-3 RATE (b)	11/40.05	14/41.80	7/40.01
POLY-3 PERCENT (g)	27.5%	33.5%	17.5%
TERMINAL (d)	2/18 (11%)	4/21 (19%)	3/20 (15%)
FIRST INCIDENCE	652	474	649
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.183N	P=0.361	P=0.209N
POLY 1.5	P=0.195N	P=0.341	P=0.219N
POLY 6	P=0.166N	P=0.400	P=0.194N
COCH-ARM / FISHERS	P=0.211N	P=0.322	P=0.232N
MAX-ISO-POLY-3	P=0.124N	P=0.279	P=0.141N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Glandular Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	1/50 (2%)	1/49 (2%)
POLY-3 RATE (b)	2/39.75	1/38.87	1/39.56
POLY-3 PERCENT (g)	5%	2.6%	2.5%
TERMINAL (d)	0/18 (0%)	0/21 (0%)	0/20 (0%)
FIRST INCIDENCE	496	622	593
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.381N	P=0.508N	P=0.502N
POLY 1.5	P=0.384N	P=0.506N	P=0.505N
POLY 6	P=0.375N	P=0.504N	P=0.492N
COCH-ARM / FISHERS	P=0.384N	P=0.500N	P=0.508N
MAX-ISO-POLY-3	P=0.375N	P=0.288N	P=0.282N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Testes: Germinal Epithelium Atrophy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	5/50 (10%)	3/50 (6%)	5/50 (10%)
POLY-3 RATE (b)	5/39.21	3/39.27	5/39.90
POLY-3 PERCENT (g)	12.8%	7.6%	12.5%
TERMINAL (d)	2/18 (11%)	1/21 (5%)	2/20 (10%)
FIRST INCIDENCE	638	565	649
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.563N	P=0.354N	P=0.621N
POLY 1.5	P=0.568N	P=0.357N	P=0.627N
POLY 6	P=0.549N	P=0.344N	P=0.604N
COCH-ARM / FISHERS	P=0.571	P=0.357N	P=0.630N
MAX-ISO-POLY-3	P=0.487N	P=0.228N	P=0.487N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Thymus Atrophy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	37/47 (79%)	36/47 (77%)	37/48 (77%)
POLY-3 RATE (b)	37/44.96	36/44.57	37/45.55
POLY-3 PERCENT (g)	82.3%	80.8%	81.2%
TERMINAL (d)	12/18 (67%)	16/20 (80%)	15/19 (79%)
FIRST INCIDENCE	514	363	362
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.503N	P=0.536N	P=0.558N
POLY 1.5	P=0.472N	P=0.501N	P=0.525N
POLY 6	P=0.553N	P=0.606N	P=0.609N
COCH-ARM / FISHERS	P=0.473N	P=0.500N	P=0.522N
MAX-ISO-POLY-3	P=0.588N	P=0.422N	P=0.445N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Thyroid Gland: C-Cell Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	16/50 (32%)	10/50 (20%)	12/49 (24%)
POLY-3 RATE (b)	16/39.85	10/39.83	12/40.34
POLY-3 PERCENT (g)	40.2%	25.1%	29.8%
TERMINAL (d)	10/18 (56%)	5/21 (24%)	7/20 (35%)
FIRST INCIDENCE	586	565	526
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.187N	P=0.110N	P=0.223N
POLY 1.5	P=0.207N	P=0.118N	P=0.249N
POLY 6	P=0.154N	P=0.092N	P=0.180N
COCH-ARM / FISHERS	P=0.227N	P=0.127N	P=0.272N
MAX-ISO-POLY-3	P=0.148N	P=0.070N	P=0.161N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Tooth Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/3 (0%)	0/0 (0%)	1/2 (50%)
POLY-3 RATE (b)	0/1.60	0/0.00	1/1.80
POLY-3 PERCENT (g)	0%	0%	55.6%
TERMINAL (d)	0/1 (0%)	0/0 (0%)	1/1 (100%)
FIRST INCIDENCE	---	---	734 (T)
<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)

---

Experiment Number: 20403 - 01  
Test Type: CHRONIC  
Route: DOSED FEED  
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
Zinc Carbonate, Basic  
CAS Number: 5263-02-5

Date Report Requested: 11/22/2015  
Time Report Requested: 17:44:41  
First Dose M/F: 09/03/09 / 09/04/09  
Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

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DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Tooth Necrosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/3 (100%)	0/0 (0%)	2/2 (100%)
POLY-3 RATE (b)	3/3.00	0/0.00	2/2.00
POLY-3 PERCENT (g)	100%	0%	100%
TERMINAL (d)	1/1 (100%)	0/0 (0%)	1/1 (100%)
FIRST INCIDENCE	488	---	681
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	(e)	(e)
POLY 1.5	(e)	(e)	(e)
POLY 6	(e)	(e)	(e)
COCH-ARM / FISHERS	(e)	(e)	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 105 WEEKS**

---

DOSE	Males		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Urinary Bladder Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/49 (0%)
POLY-3 RATE (b)	2/38.57	1/38.48	0/39.14
POLY-3 PERCENT (g)	5.2%	2.6%	0%
TERMINAL (d)	1/18 (6%)	1/21 (5%)	0/20 (0%)
FIRST INCIDENCE	691	734 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.140N	P=0.501N	P=0.233N
POLY 1.5	P=0.143N	P=0.502N	P=0.237N
POLY 6	P=0.136N	P=0.495N	P=0.226N
COCH-ARM / FISHERS	P=0.145N	P=0.500N	P=0.253N
MAX-ISO-POLY-3	P=0.104N	P=0.280N	P=0.076N

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Degeneration Cystic</b>			
<b>LESION RATES</b>			
OVERALL (a)	3/50 (6%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	3/39.46	1/39.10	2/40.49
POLY-3 PERCENT (g)	7.6%	2.6%	4.9%
TERMINAL (d)	3/25 (12%)	1/27 (4%)	1/31 (3%)
FIRST INCIDENCE	725 (T)	725 (T)	701
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.393N	P=0.308N	P=0.488N
POLY 1.5	P=0.398N	P=0.309N	P=0.498N
POLY 6	P=0.380N	P=0.303N	P=0.467N
COCH-ARM / FISHERS	P=0.399N	P=0.309N	P=0.500N
MAX-ISO-POLY-3	P=0.306N	P=0.156N	P=0.315N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	6/50 (12%)	4/50 (8%)	5/50 (10%)
POLY-3 RATE (b)	6/40.62	4/39.50	5/40.39
POLY-3 PERCENT (g)	14.8%	10.1%	12.4%
TERMINAL (d)	3/25 (12%)	2/27 (7%)	5/31 (16%)
FIRST INCIDENCE	435	659	725 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.437N	P=0.386N	P=0.504N
POLY 1.5	P=0.442N	P=0.383N	P=0.509N
POLY 6	P=0.421N	P=0.382N	P=0.485N
COCH-ARM / FISHERS	P=0.434N	P=0.370N	P=0.500N
MAX-ISO-POLY-3	P=0.437N	P=0.268N	P=0.376N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Cortex Thrombosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	2/39.25	0/40.39
POLY-3 PERCENT (g)	0%	5.1%	0%
TERMINAL (d)	0/25 (0%)	1/27 (4%)	0/31 (0%)
FIRST INCIDENCE	---	687	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.662N	P=0.235	(e)
POLY 1.5	P=0.668N	P=0.235	(e)
POLY 6	P=0.647N	P=0.238	(e)
COCH-ARM / FISHERS	P=0.669	P=0.247	(e)
MAX-ISO-POLY-3	P=0.264N	P=0.075	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Medulla Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	6/50 (12%)	3/50 (6%)	2/50 (4%)
POLY-3 RATE (b)	6/39.60	3/39.10	2/40.39
POLY-3 PERCENT (g)	15.2%	7.7%	5%
TERMINAL (d)	5/25 (20%)	3/27 (11%)	2/31 (7%)
FIRST INCIDENCE	690	725 (T)	725 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.083N	P=0.245N	P=0.124N
POLY 1.5	P=0.087N	P=0.247N	P=0.131N
POLY 6	P=0.074N	P=0.239N	P=0.111N
COCH-ARM / FISHERS	P=0.090N	P=0.243N	P=0.134N
MAX-ISO-POLY-3	P=0.078N	P=0.149N	P=0.064N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Adrenal Medulla: Bilateral Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Blood Vessel Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	1/50 (2%)	1/50 (2%)
POLY-3 RATE (b)	1/39.46	1/39.10	1/40.39
POLY-3 PERCENT (g)	2.5%	2.6%	2.5%
TERMINAL (d)	1/25 (4%)	1/27 (4%)	1/31 (3%)
FIRST INCIDENCE	725 (T)	725 (T)	725 (T)
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Blood Vessel Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS  
 Zinc Carbonate, Basic  
 CAS Number: 5263-02-5

Date Report Requested: 11/22/2015  
 Time Report Requested: 17:44:41  
 First Dose M/F: 09/03/09 / 09/04/09  
 Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
 TERMINAL SACRIFICE AT 104 WEEKS**

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone Marrow Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	1/40.19	2/39.10	0/40.39
POLY-3 PERCENT (g)	2.5%	5.1%	0%
TERMINAL (d)	0/25 (0%)	2/27 (7%)	0/31 (0%)
FIRST INCIDENCE	469	725 (T)	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.359N	P=0.490	P=0.499N
POLY 1.5	P=0.364N	P=0.492	P=0.501N
POLY 6	P=0.347N	P=0.492	P=0.492N
COCH-ARM / FISHERS	P=0.360N	P=0.500	P=0.500N
MAX-ISO-POLY-3	P=0.192N	P=0.274	P=0.158N



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone Marrow Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	14/50 (28%)	14/50 (28%)	18/50 (36%)
POLY-3 RATE (b)	14/43.13	14/43.99	18/46.93
POLY-3 PERCENT (g)	32.5%	31.8%	38.4%
TERMINAL (d)	6/25 (24%)	3/27 (11%)	5/31 (16%)
FIRST INCIDENCE	540	449	357
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.310	P=0.566N	P=0.358
POLY 1.5	P=0.271	P=0.580N	P=0.314
POLY 6	P=0.366	P=0.546N	P=0.418
COCH-ARM / FISHERS	P=0.224	P=0.588N	P=0.260
MAX-ISO-POLY-3	P=0.382	P=0.474N	P=0.288

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone</b>			
<b>Fibrous Osteodystrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Bone: Maxilla</b>			
<b>Fibrosis</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	2/39.66	0/40.39
POLY-3 PERCENT (g)	0%	5%	0%
TERMINAL (d)	0/25 (0%)	1/27 (4%)	0/31 (0%)
FIRST INCIDENCE	---	552	---
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.661N	P=0.238	(e)
POLY 1.5	P=0.668N	P=0.236	(e)
POLY 6	P=0.646N	P=0.242	(e)
COCH-ARM / FISHERS	P=0.669	P=0.247	(e)
MAX-ISO-POLY-3	P=0.265N	P=0.076	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Anterior Chamber			
Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Bilateral, Cornea Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Bilateral, Cornea Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea			
Inflammation Acute			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea			
Inflammation Chronic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Eye: Cornea			
Necrosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/38.23	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Heart Cardiomyopathy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	7/50 (14%)	8/50 (16%)	6/50 (12%)
POLY-3 RATE (b)	7/40.31	8/40.99	6/40.69
POLY-3 PERCENT (g)	17.4%	19.5%	14.8%
TERMINAL (d)	4/25 (16%)	5/27 (19%)	5/31 (16%)
FIRST INCIDENCE	568	488	645
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.434N	P=0.514	P=0.493N
POLY 1.5	P=0.445N	P=0.504	P=0.503N
POLY 6	P=0.407N	P=0.530	P=0.467N
COCH-ARM / FISHERS	P=0.443N	P=0.500	P=0.500N
MAX-ISO-POLY-3	P=0.456N	P=0.400	P=0.373N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Heart Mineralization			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Heart: Atrium Thrombosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Islets, Pancreatic Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.04	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Kidney Cyst			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/40.05	0/39.10	0/40.35
POLY-3 PERCENT (g)	5%	0%	0%
TERMINAL (d)	1/25 (4%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	540	---	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.095N	P=0.242N	P=0.235N
POLY 1.5	P=0.096N	P=0.241N	P=0.239N
POLY 6	P=0.094N	P=0.241N	P=0.227N
COCH-ARM / FISHERS	P=0.097N	P=0.247N	P=0.253N
MAX-ISO-POLY-3	P=0.053N	P=0.080N	P=0.077N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Kidney</b>			
<b>Infarct Chronic</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Kidney Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	2/49 (4%)
POLY-3 RATE (b)	0/39.46	0/39.10	2/40.35
POLY-3 PERCENT (g)	0%	0%	5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	2/31 (7%)
FIRST INCIDENCE	---	---	725 (T)
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.096	(e)	P=0.242
POLY 1.5	P=0.094	(e)	P=0.237
POLY 6	P=0.100	(e)	P=0.252
COCH-ARM / FISHERS	P=0.093	(e)	P=0.242
MAX-ISO-POLY-3	P=0.058	(e)	P=0.081

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Kidney</b>			
<b>Nephropathy</b>			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	27/50 (54%)	31/50 (62%)	29/49 (59%)
POLY-3 RATE (b)	27/44.39	31/45.29	29/45.57
POLY-3 PERCENT (g)	60.8%	68.4%	63.6%
TERMINAL (d)	14/25 (56%)	18/27 (67%)	19/31 (61%)
FIRST INCIDENCE	435	278	357
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.438	P=0.291	P=0.477
POLY 1.5	P=0.395	P=0.276	P=0.435
POLY 6	P=0.503	P=0.322	P=0.537
COCH-ARM / FISHERS	P=0.335	P=0.272	P=0.376
MAX-ISO-POLY-3	P=0.418	P=0.221	P=0.389

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Clear Cell Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	5/50 (10%)	5/50 (10%)
POLY-3 RATE (b)	2/39.46	5/40.39	5/41.23
POLY-3 PERCENT (g)	5.1%	12.4%	12.1%
TERMINAL (d)	2/25 (8%)	3/27 (11%)	4/31 (13%)
FIRST INCIDENCE	725 (T)	488	396
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.197	P=0.223	P=0.232
POLY 1.5	P=0.185	P=0.218	P=0.222
POLY 6	P=0.220	P=0.234	P=0.253
COCH-ARM / FISHERS	P=0.178	P=0.218	P=0.218
MAX-ISO-POLY-3	P=0.202	P=0.127	P=0.135

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Eosinophilic Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	0/39.46	1/39.25	2/40.39
POLY-3 PERCENT (g)	0%	2.6%	5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	2/31 (7%)
FIRST INCIDENCE	---	687	725 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.147	P=0.499	P=0.242
POLY 1.5	P=0.143	P=0.498	P=0.238
POLY 6	P=0.156	P=0.502	P=0.251
COCH-ARM / FISHERS	P=0.142	P=0.500	P=0.247
MAX-ISO-POLY-3	P=0.110	P=0.158	P=0.080

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Fatty Change			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	6/50 (12%)	4/50 (8%)	3/50 (6%)
POLY-3 RATE (b)	6/41.36	4/39.61	3/40.39
POLY-3 PERCENT (g)	14.5%	10.1%	7.4%
TERMINAL (d)	1/25 (4%)	2/27 (7%)	3/31 (10%)
FIRST INCIDENCE	469	656	725 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.195N	P=0.396N	P=0.252N
POLY 1.5	P=0.196N	P=0.388N	P=0.252N
POLY 6	P=0.189N	P=0.400N	P=0.245N
COCH-ARM / FISHERS	P=0.187N	P=0.370N	P=0.243N
MAX-ISO-POLY-3	P=0.212N	P=0.279N	P=0.156N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver			
Mixed Cell Focus			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	4/50 (8%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	4/39.63	0/40.39
POLY-3 PERCENT (g)	0%	10.1%	0%
TERMINAL (d)	0/25 (0%)	1/27 (4%)	0/31 (0%)
FIRST INCIDENCE	---	659	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.611N	P=0.060	(e)
POLY 1.5	P=0.622N	P=0.059	(e)
POLY 6	P=0.586N	P=0.062	(e)
COCH-ARM / FISHERS	P=0.622	P=0.059	(e)
MAX-ISO-POLY-3	P=0.140N	P=0.019*	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Bile Duct Hyperplasia			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Hepatocyte Necrosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.46	0/39.10	1/40.86
POLY-3 PERCENT (g)	0%	0%	2.5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	---	---	587
<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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Liver: Hepatocyte			
Vacuolization Cytoplasmic			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	1/39.79	2/39.81	0/40.39
POLY-3 PERCENT (g)	2.5%	5%	0%
TERMINAL (d)	0/25 (0%)	1/27 (4%)	0/31 (0%)
FIRST INCIDENCE	635	481	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.355N	P=0.500	P=0.497N
POLY 1.5	P=0.361N	P=0.498	P=0.500N
POLY 6	P=0.343N	P=0.504	P=0.490N
COCH-ARM / FISHERS	P=0.360N	P=0.500	P=0.500N
MAX-ISO-POLY-3	P=0.197N	P=0.280	P=0.158N

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Lung Infiltration Cellular Histiocyte			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	37/50 (74%)	38/50 (76%)	35/50 (70%)
POLY-3 RATE (b)	37/46.02	38/45.77	35/44.54
POLY-3 PERCENT (g)	80.4%	83%	78.6%
TERMINAL (d)	21/25 (84%)	23/27 (85%)	24/31 (77%)
FIRST INCIDENCE	362	449	330
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.469N	P=0.476	P=0.520N
POLY 1.5	P=0.448N	P=0.467	P=0.496N
POLY 6	P=0.446N	P=0.500	P=0.501N
COCH-ARM / FISHERS	P=0.367N	P=0.500	P=0.412N
MAX-ISO-POLY-3	P=0.479N	P=0.364	P=0.410N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Lung Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.46	0/39.10	1/40.39
POLY-3 PERCENT (g)	0%	0%	2.5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	1/31 (3%)
FIRST INCIDENCE	---	---	725 (T)
<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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/48 (2%)	0/48 (0%)
POLY-3 RATE (b)	0/39.46	1/38.50	0/39.82
POLY-3 PERCENT (g)	0%	2.6%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	---	278	---
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	8/50 (16%)	8/48 (17%)	6/48 (13%)
POLY-3 RATE (b)	8/40.76	8/39.17	6/41.53
POLY-3 PERCENT (g)	19.6%	20.4%	14.5%
TERMINAL (d)	4/25 (16%)	4/27 (15%)	4/31 (13%)
FIRST INCIDENCE	435	537	362
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.317N	P=0.576	P=0.370N
POLY 1.5	P=0.340N	P=0.567	P=0.391N
POLY 6	P=0.286N	P=0.599	P=0.339N
COCH-ARM / FISHERS	P=0.367N	P=0.572	P=0.419N
MAX-ISO-POLY-3	P=0.361N	P=0.464	P=0.270N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mandibular Infiltration Cellular Plasma Cell</b>			
<b>LESION RATES</b>			
OVERALL (a)	15/50 (30%)	14/48 (29%)	10/48 (21%)
POLY-3 RATE (b)	15/45.21	14/41.49	10/42.71
POLY-3 PERCENT (g)	33.2%	33.7%	23.4%
TERMINAL (d)	5/25 (20%)	5/27 (19%)	5/31 (16%)
FIRST INCIDENCE	253	481	330
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.190N	P=0.569	P=0.217N
POLY 1.5	P=0.191N	P=0.576	P=0.218N
POLY 6	P=0.182N	P=0.582	P=0.209N
COCH-ARM / FISHERS	P=0.183N	P=0.552N	P=0.210N
MAX-ISO-POLY-3	P=0.215N	P=0.477	P=0.158N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	0/50 (0%)	1/49 (2%)
POLY-3 RATE (b)	1/39.46	0/39.10	1/41.26
POLY-3 PERCENT (g)	2.5%	0%	2.4%
TERMINAL (d)	1/25 (4%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	725 (T)	---	330
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node, Mesenteric Infiltration Cellular Histiocyte</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	0/50 (0%)	3/49 (6%)
POLY-3 RATE (b)	1/39.46	0/39.10	3/40.45
POLY-3 PERCENT (g)	2.5%	0%	7.4%
TERMINAL (d)	1/25 (4%)	0/27 (0%)	2/31 (7%)
FIRST INCIDENCE	725 (T)	---	701
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.176	P=0.502N	P=0.313
POLY 1.5	P=0.173	P=0.502N	P=0.305
POLY 6	P=0.184	P=0.500N	P=0.330
COCH-ARM / FISHERS	P=0.171	P=0.500N	P=0.301
MAX-ISO-POLY-3	P=0.088	P=0.161N	P=0.164

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Lymph Node: Mediastinal Hemorrhage</b>			
<b>LESION RATES</b>			
OVERALL (a)	1/1 (100%)	0/0 (0%)	0/1 (0%)
POLY-3 RATE (b)	1/1.00	0/0.00	0/0.63
POLY-3 PERCENT (g)	100%	0%	0%
TERMINAL (d)	1/1 (100%)	0/0 (0%)	0/0 (0%)
FIRST INCIDENCE	725 (T)	---	---
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Mammary Gland Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	2/50 (4%)	2/50 (4%)
POLY-3 RATE (b)	2/39.73	2/39.10	2/40.69
POLY-3 PERCENT (g)	5%	5.1%	4.9%
TERMINAL (d)	0/25 (0%)	2/27 (7%)	1/31 (3%)
FIRST INCIDENCE	677	725 (T)	645
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.592N	P=0.689	P=0.686N
POLY 1.5	P=0.599N	P=0.689	P=0.693N
POLY 6	P=0.577N	P=0.691	P=0.671N
COCH-ARM / FISHERS	P=0.601	P=0.691N	P=0.691N
MAX-ISO-POLY-3	P=0.651N	P=0.493	P=0.490N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Nose Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	2/50 (4%)	4/50 (8%)
POLY-3 RATE (b)	1/39.87	2/39.10	4/40.39
POLY-3 PERCENT (g)	2.5%	5.1%	9.9%
TERMINAL (d)	0/25 (0%)	2/27 (7%)	4/31 (13%)
FIRST INCIDENCE	609	725 (T)	725 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.120	P=0.493	P=0.181
POLY 1.5	P=0.117	P=0.494	P=0.178
POLY 6	P=0.127	P=0.494	P=0.191
COCH-ARM / FISHERS	P=0.118	P=0.500	P=0.181
MAX-ISO-POLY-3	P=0.108	P=0.276	P=0.086

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Nose: Respiratory Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Ovary Atrophy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	31/50 (62%)	29/50 (58%)	26/49 (53%)
POLY-3 RATE (b)	31/42.90	29/40.96	26/41.97
POLY-3 PERCENT (g)	72.3%	70.8%	62%
TERMINAL (d)	19/25 (76%)	22/27 (82%)	20/31 (65%)
FIRST INCIDENCE	540	488	621
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.166N	P=0.540N	P=0.205N
POLY 1.5	P=0.188N	P=0.490N	P=0.224N
POLY 6	P=0.132N	P=0.610N	P=0.173N
COCH-ARM / FISHERS	P=0.212N	P=0.419N	P=0.243N
MAX-ISO-POLY-3	P=0.191N	P=0.435N	P=0.144N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Ovary			
Cyst			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	12/50 (24%)	11/50 (22%)	4/49 (8%)
POLY-3 RATE (b)	12/41.06	11/40.35	4/40.35
POLY-3 PERCENT (g)	29.2%	27.3%	9.9%
TERMINAL (d)	7/25 (28%)	8/27 (30%)	4/31 (13%)
FIRST INCIDENCE	549	552	725 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.022N*	P=0.520N	P=0.025N*
POLY 1.5	P=0.024N*	P=0.517N	P=0.027N*
POLY 6	P=0.019N*	P=0.516N	P=0.022N*
COCH-ARM / FISHERS	P=0.028N*	P=0.500N	P=0.030N*
MAX-ISO-POLY-3	P=0.020N*	P=0.420N	P=0.012N*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pancreas: Acinus Atrophy</b>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	5/49 (10%)	10/49 (20%)
POLY-3 RATE (b)	2/39.89	5/39.54	10/41.71
POLY-3 PERCENT (g)	5%	12.6%	24%
TERMINAL (d)	1/25 (4%)	4/27 (15%)	6/31 (19%)
FIRST INCIDENCE	601	575	488
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.009**	P=0.210	P=0.015*
POLY 1.5	P=0.008**	P=0.209	P=0.014*
POLY 6	P=0.012*	P=0.214	P=0.019*
COCH-ARM / FISHERS	P=0.008**	P=0.210	P=0.013*
MAX-ISO-POLY-3	P=0.009**	P=0.114	P=0.008**

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pancreas: Acinus Basophilic Focus</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.04	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Pancreas: Acinus Hyperplasia			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/49 (0%)	1/49 (2%)
POLY-3 RATE (b)	2/39.46	0/39.04	1/40.35
POLY-3 PERCENT (g)	5.1%	0%	2.5%
TERMINAL (d)	2/25 (8%)	0/27 (0%)	1/31 (3%)
FIRST INCIDENCE	725 (T)	---	725 (T)
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.363N	P=0.239N	P=0.492N
POLY 1.5	P=0.365N	P=0.241N	P=0.500N
POLY 6	P=0.359N	P=0.236N	P=0.477N
COCH-ARM / FISHERS	P=0.366N	P=0.253N	P=0.508N
MAX-ISO-POLY-3	P=0.198N	P=0.077N	P=0.276N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Parathyroid Gland Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/42 (0%)	0/42 (0%)	0/43 (0%)
POLY-3 RATE (b)	0/33.40	0/33.78	0/34.82
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/22 (0%)	0/23 (0%)	0/26 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Pituitary Gland: Pars Distalis Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	15/50 (30%)	13/50 (26%)	17/50 (34%)
POLY-3 RATE (b)	15/41.24	13/40.50	17/41.38
POLY-3 PERCENT (g)	36.4%	32.1%	41.1%
TERMINAL (d)	9/25 (36%)	9/27 (33%)	15/31 (48%)
FIRST INCIDENCE	575	537	488
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.368	P=0.430N	P=0.414
POLY 1.5	P=0.360	P=0.428N	P=0.404
POLY 6	P=0.392	P=0.428N	P=0.443
COCH-ARM / FISHERS	P=0.372	P=0.412N	P=0.415
MAX-ISO-POLY-3	P=0.357	P=0.341N	P=0.328

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin			
Cyst Epithelial Inclusion			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin			
Ulcer			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.46	0/39.10	1/40.39
POLY-3 PERCENT (g)	0%	0%	2.5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	1/31 (3%)
FIRST INCIDENCE	---	---	725 (T)
<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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Skin: Epidermis Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Skin: Hair Follicle Cyst			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.39
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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)

---



Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

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DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Spleen			
Hematopoietic Cell Proliferation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	25/50 (50%)	39/50 (78%)	34/49 (69%)
POLY-3 RATE (b)	25/44.97	39/47.37	34/46.89
POLY-3 PERCENT (g)	55.6%	82.3%	72.5%
TERMINAL (d)	12/25 (48%)	21/27 (78%)	21/31 (68%)
FIRST INCIDENCE	435	179	357
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.048*	P=0.003**	P=0.064
POLY 1.5	P=0.036*	P=0.003**	P=0.052
POLY 6	P=0.067	P=0.004**	P=0.082
COCH-ARM / FISHERS	P=0.026*	P=0.003**	P=0.039*
MAX-ISO-POLY-3	P=0.012*	P=0.002**	P=0.044*

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Spleen Pigmentation Hemosiderin			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	39/50 (78%)	42/50 (84%)	33/49 (67%)
POLY-3 RATE (b)	39/46.51	42/48.31	33/44.34
POLY-3 PERCENT (g)	83.9%	86.9%	74.4%
TERMINAL (d)	21/25 (84%)	24/27 (89%)	26/31 (84%)
FIRST INCIDENCE	253	278	330
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.144N	P=0.443	P=0.181N
POLY 1.5	P=0.138N	P=0.362	P=0.175N
POLY 6	P=0.152N	P=0.548	P=0.190N
COCH-ARM / FISHERS	P=0.131N	P=0.306	P=0.168N
MAX-ISO-POLY-3	P=0.107N	P=0.329	P=0.122N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Spleen: Lymphoid Follicle Atrophy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	3/50 (6%)	0/49 (0%)
POLY-3 RATE (b)	1/40.33	3/41.00	0/40.35
POLY-3 PERCENT (g)	2.5%	7.3%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	362	278	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.374N	P=0.310	P=0.500N
POLY 1.5	P=0.382N	P=0.307	P=0.503N
POLY 6	P=0.357N	P=0.319	P=0.492N
COCH-ARM / FISHERS	P=0.384N	P=0.309	P=0.505N
MAX-ISO-POLY-3	P=0.149N	P=0.159	P=0.160N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Spleen: Lymphoid Follicle Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	11/50 (22%)	7/50 (14%)	8/49 (16%)
POLY-3 RATE (b)	11/41.85	7/40.75	8/44.38
POLY-3 PERCENT (g)	26.3%	17.2%	18%
TERMINAL (d)	6/25 (24%)	3/27 (11%)	2/31 (7%)
FIRST INCIDENCE	435	488	357
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.212N	P=0.229N	P=0.253N
POLY 1.5	P=0.236N	P=0.228N	P=0.281N
POLY 6	P=0.183N	P=0.225N	P=0.217N
COCH-ARM / FISHERS	P=0.269N	P=0.218N	P=0.323N
MAX-ISO-POLY-3	P=0.229N	P=0.160N	P=0.185N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Forestomach Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Stomach, Forestomach Ulcer			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/50 (2%)	1/50 (2%)	1/49 (2%)
POLY-3 RATE (b)	1/39.94	1/39.79	1/40.68
POLY-3 PERCENT (g)	2.5%	2.5%	2.5%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	584	488	635
<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)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Forestomach: Epithelium Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	5/50 (10%)	2/50 (4%)	4/49 (8%)
POLY-3 RATE (b)	5/42.03	2/40.50	4/42.48
POLY-3 PERCENT (g)	11.9%	4.9%	9.4%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	469	481	330
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.422N	P=0.230N	P=0.493N
POLY 1.5	P=0.429N	P=0.226N	P=0.503N
POLY 6	P=0.409N	P=0.234N	P=0.475N
COCH-ARM / FISHERS	P=0.435N	P=0.218N	P=0.513N
MAX-ISO-POLY-3	P=0.314N	P=0.132N	P=0.357N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Stomach, Glandular Mineralization</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	0/39.10	0/40.35
POLY-3 PERCENT (g)	0%	0%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Thymus Atrophy			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	35/48 (73%)	32/49 (65%)	33/49 (67%)
POLY-3 RATE (b)	35/43.15	32/44.16	33/44.12
POLY-3 PERCENT (g)	81.1%	72.5%	74.8%
TERMINAL (d)	22/24 (92%)	20/27 (74%)	23/31 (74%)
FIRST INCIDENCE	362	278	396
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.275N	P=0.224N	P=0.314N
POLY 1.5	P=0.304N	P=0.251N	P=0.343N
POLY 6	P=0.208N	P=0.182N	P=0.239N
COCH-ARM / FISHERS	P=0.316N	P=0.277N	P=0.353N
MAX-ISO-POLY-3	P=0.268N	P=0.152N	P=0.225N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Thyroid Gland: C-Cell Hyperplasia</b>			
<b>LESION RATES</b>			
OVERALL (a)	18/50 (36%)	14/50 (28%)	5/48 (10%)
POLY-3 RATE (b)	18/42.89	14/40.74	5/40.15
POLY-3 PERCENT (g)	42%	34.4%	12.5%
TERMINAL (d)	8/25 (32%)	10/27 (37%)	4/31 (13%)
FIRST INCIDENCE	469	481	635
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.002N**	P=0.309N	P=0.002N**
POLY 1.5	P=0.002N**	P=0.291N	P=0.002N**
POLY 6	P=0.002N**	P=0.332N	P=0.002N**
COCH-ARM / FISHERS	P=0.003N**	P=0.260N	P=0.003N**
MAX-ISO-POLY-3	P<0.001N**	P=0.240N	P<0.001N**

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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Date Report Requested: 11/22/2015

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Tooth Inflammation			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	0/1 (0%)	3/6 (50%)	0/0 (0%)
POLY-3 RATE (b)	0/1.00	3/5.11	0/0.00
POLY-3 PERCENT (g)	0%	58.7%	0%
TERMINAL (d)	0/1 (0%)	0/1 (0%)	0/0 (0%)
FIRST INCIDENCE	---	449	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	P=0.508	(e)
POLY 1.5	(e)	P=0.532	(e)
POLY 6	(e)	P=0.469	(e)
COCH-ARM / FISHERS	P=0.562	P=0.571	(e)
MAX-ISO-POLY-3	(e)	P=0.192	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Tooth Necrosis			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	1/1 (100%)	3/6 (50%)	0/0 (0%)
POLY-3 RATE (b)	1/1.00	3/3.88	0/0.00
POLY-3 PERCENT (g)	100%	77.4%	0%
TERMINAL (d)	1/1 (100%)	1/1 (100%)	0/0 (0%)
FIRST INCIDENCE	725 (T)	552	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	(e)	P=0.930N	(e)
POLY 1.5	(e)	P=0.732N	(e)
POLY 6	(e)	P=1.000N	(e)
COCH-ARM / FISHERS	P=0.562N	P=0.571N	(e)
MAX-ISO-POLY-3	(e)	P=0.245N	(e)

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Urinary Bladder Inflammation</b>			
<b>LESION RATES</b>			
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/49 (0%)
POLY-3 RATE (b)	0/39.46	1/39.81	0/40.35
POLY-3 PERCENT (g)	0%	2.5%	0%
TERMINAL (d)	0/25 (0%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	---	481	---
<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: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Uterus</b>			
<b>Metaplasia</b>			
<b>LESION RATES</b>			
<b>OVERALL (a)</b>	21/50 (42%)	15/50 (30%)	20/50 (40%)
<b>POLY-3 RATE (b)</b>	21/42.12	15/40.50	20/42.26
<b>POLY-3 PERCENT (g)</b>	49.9%	37%	47.3%
<b>TERMINAL (d)</b>	13/25 (52%)	12/27 (44%)	15/31 (48%)
<b>FIRST INCIDENCE</b>	582	481	568
<b>STATISTICAL TESTS</b>			
<b>POLY 3</b>	P=0.450N	P=0.163N	P=0.494N
<b>POLY 1.5</b>	P=0.466N	P=0.158N	P=0.511N
<b>POLY 6</b>	P=0.409N	P=0.173N	P=0.448N
<b>COCH-ARM / FISHERS</b>	P=0.459N	P=0.149N	P=0.500N
<b>MAX-ISO-POLY-3</b>	P=0.328N	P=0.118N	P=0.404N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<hr/>			
Uterus			
Pigmentation Hemosiderin			
<hr/>			
<b>LESION RATES</b>			
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/39.91	0/39.10	0/40.39
POLY-3 PERCENT (g)	5%	0%	0%
TERMINAL (d)	1/25 (4%)	0/27 (0%)	0/31 (0%)
FIRST INCIDENCE	593	---	---
<hr/>			
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.094N	P=0.241N	P=0.234N
POLY 1.5	P=0.095N	P=0.241N	P=0.237N
POLY 6	P=0.093N	P=0.240N	P=0.226N
COCH-ARM / FISHERS	P=0.095N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.052N	P=0.080N	P=0.075N

---

Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

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First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS IN RATS(HSD)  
TERMINAL SACRIFICE AT 104 WEEKS**

---

DOSE	Females		
	Control (38ppm)	250ppmModZnExc	500ppm ZnExc
<b>Uterus: Endometrium Hyperplasia Cystic</b>			
<b>LESION RATES</b>			
OVERALL (a)	9/50 (18%)	7/50 (14%)	7/50 (14%)
POLY-3 RATE (b)	9/41.50	7/40.38	7/40.96
POLY-3 PERCENT (g)	21.7%	17.3%	17.1%
TERMINAL (d)	5/25 (20%)	5/27 (19%)	5/31 (16%)
FIRST INCIDENCE	362	449	645
<b>STATISTICAL TESTS</b>			
POLY 3	P=0.346N	P=0.414N	P=0.401N
POLY 1.5	P=0.352N	P=0.410N	P=0.408N
POLY 6	P=0.322N	P=0.412N	P=0.376N
COCH-ARM / FISHERS	P=0.339N	P=0.393N	P=0.393N
MAX-ISO-POLY-3	P=0.411N	P=0.312N	P=0.300N

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Experiment Number: 20403 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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

Zinc Carbonate, Basic

CAS Number: 5263-02-5

Date Report Requested: 11/22/2015

Time Report Requested: 17:44:41

First Dose M/F: 09/03/09 / 09/04/09

Lab: BAT

**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 \*\*\*