Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

C Number: C88038

Lock Date: 01/24/1992

Cage Range: All

Date Range: All

Reasons For Removal:

Removal Date Range: All

Treatment Groups: All

Study Gender: Both

PWG Approval Date NONE

Test Type: 90-DAY Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

SUMMARY OF STATISTICALLY SIGNIFICANT (P<=.05) RESULTS IN THE ANALYSIS OF GLYOXAL

MALE RAT

Organ Adrenal Cortex

Epididymis

Heart Kidney

Kidney: Papilla Kidney: Renal Tubule

Liver

Lymph Node, Mesenteric

Salivary Glands

FEMALE RAT

Organ

Adrenal Cortex

Liver

Lymph Node, Mesenteric

Ovary Thymus Uterus

Morphology

Accessory Adrenal Cortical Nodule

Atypia Cellular Hypospermia Cardiomyopathy Nephropathy

Cytoplasmic Alteration

Dilatation

Hepatodiaphragmatic Nodule

Hemorrhage Atrophy

Morphology

Accessory Adrenal Cortical Nodule Hepatodiaphragmatic Nodule

Hemorrhage

Cyst Atrophy Hydrometra

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Adrenal Cortex						
Accessory Adrenal Cortical N	lodule					
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	3/10 (30%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	3/3.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	99.3%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE					92(T)	12
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	P=0.003**
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	P=0.005**
POLY 6	(e)	(e)	(e)	(e)	P=0.500	P=0.003**
COCH-ARM / FISHERS	P=0.050*	(e)	(e)	(e)	P=0.500	P=0.105
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	P=0.006**
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Type: 90-DAY Test Compound: Glyoxal Route: DOSED WATER **CAS Number:** 107-22-2 Species/Strain: Rat/F 344/N

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44 First Dose M/F: NA / NA

Lab: SRI

		MALE				
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Adrenal Cortex						
Developmental Malformation						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Adrenal Medulla						
Inflammation Chronic						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Bone Marrow						
Myelofibrosis						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Brain							
Inflammation Chronic							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Epididymis						
Atypia Cellular						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						12
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=NA
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=NA
POLY 6	(e)	(e)	(e)	(e)	(e)	P=NA
COCH-ARM / FISHERS	P=0.000**	(e)	(e)	(e)	(e)	P=0.000**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Epididymis						
Hypospermia						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	10/10 (100%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	10/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	100%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						12
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=NA
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=NA
POLY 6	(e)	(e)	(e)	(e)	(e)	P=NA
COCH-ARM / FISHERS	P=0.000**	(e)	(e)	(e)	(e)	P=0.000**
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

		MALE				
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Heart						
Cardiomyopathy						
LESION RATES						
OVERALL(a)	4/10 (40%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	5/10 (50%)	0/10 (0%)
POLY-3 RATE (b)	4/10.00	0/0.00	0/0.00	0/0.00	5/10.00	0/0.02
POLY-3 PERCENT (g)	40%	0%	0%	0%	50%	0%
TERMINAL (d)	4/10 (40%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	5/10 (50%)	0/0 (0%)
FIRST INCIDENCE	92(T)				92(T)	
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	P=0.665N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	P=0.614N
POLY 6	(e)	(e)	(e)	(e)	P=0.500	P=0.667N
COCH-ARM / FISHERS	P=0.044N*	(e)	(e)	(e)	P=0.500	P=0.043N*
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.334	P=0.498N
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Kidney							
Inflammation Chronic							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	1/10.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	10%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE				92(T)			
STATISTICAL TESTS							
POLY 3	P=0.651	(e)	(e)	P=0.500	(e)	(e)	
POLY 1.5	P=0.651	(e)	(e)	P=0.500	(e)	(e)	
POLY 6	P=0.651	(e)	(e)	P=0.500	(e)	(e)	
COCH-ARM / FISHERS	P=0.699N	(e)	(e)	P=0.500	(e)	(e)	
MAX-ISO-POLY-3	P=0.832	(e)	(e)	P=0.159	(e)	(e)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Kidney						
Mineralization						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	1/10.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	10%	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE				92(T)		
STATISTICAL TESTS						
POLY 3	P=0.651	(e)	(e)	P=0.500	(e)	(e)
POLY 1.5	P=0.651	(e)	(e)	P=0.500	(e)	(e)
POLY 6	P=0.651	(e)	(e)	P=0.500	(e)	(e)
COCH-ARM / FISHERS	P=0.699N	(e)	(e)	P=0.500	(e)	(e)
MAX-ISO-POLY-3	P=0.832	(e)	(e)	P=0.159	(e)	(e)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Kidney								
Nephropathy								
LESION RATES								
OVERALL(a)	5/10 (50%)	4/10 (40%)	5/10 (50%)	4/10 (40%)	5/10 (50%)	0/10 (0%)		
POLY-3 RATE (b)	5/10.00	4/10.00	5/10.00	4/10.00	5/10.00	0/0.02		
POLY-3 PERCENT (g)	50%	40%	50%	40%	50%	0%		
TERMINAL (d)	5/10 (50%)	4/10 (40%)	5/10 (50%)	4/10 (40%)	5/10 (50%)	0/0 (0%)		
FIRST INCIDENCE	92(T)	92(T)	92(T)	92(T)	92(T)			
STATISTICAL TESTS								
POLY 3	P=0.542	P=0.500N	P=0.664	P=0.500N	P=0.664	P=0.661N		
POLY 1.5	P=0.547	P=0.500N	P=0.664	P=0.500N	P=0.664	P=0.596N		
POLY 6	P=0.542	P=0.500N	P=0.664	P=0.500N	P=0.664	P=0.664N		
COCH-ARM / FISHERS	P=0.015N*	P=0.500N	P=0.672N	P=0.500N	P=0.672N	P=0.016N*		
MAX-ISO-POLY-3	P=0.830N	P=0.334N	P=1.000	P=0.334N	P=1.000	P=0.498N		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Kidney: Papilla							
Cytoplasmic Alteration							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	6/10 (60%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	1/10.00	6/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	10%	60%	0%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	6/10 (60%)	0/0 (0%)	
FIRST INCIDENCE				92(T)	92(T)		
STATISTICAL TESTS							
POLY 3	P=0.000**	(e)	(e)	P=0.500	P<0.001**	(e)	
POLY 1.5	P=0.000**	(e)	(e)	P=0.500	P<0.001**	(e)	
POLY 6	P=0.000**	(e)	(e)	P=0.500	P<0.001**	(e)	
COCH-ARM / FISHERS	P=0.193	(e)	(e)	P=0.500	P=0.005**	(e)	
MAX-ISO-POLY-3	P=0.000**	(e)	(e)	P=0.159	P=0.000**	(e)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Kidney: Renal Tubule									
Dilatation									
LESION RATES									
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	3/10 (30%)	0/10 (0%)			
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	1/10.00	3/10.00	0/0.02			
POLY-3 PERCENT (g)	0%	0%	0%	10%	30%	0%			
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)	3/10 (30%)	0/0 (0%)			
FIRST INCIDENCE				92(T)	92(T)				
STATISTICAL TESTS									
POLY 3	P<0.001**	(e)	(e)	P=0.500	P=0.095	(e)			
POLY 1.5	P=0.002**	(e)	(e)	P=0.500	P=0.095	(e)			
POLY 6	P<0.001**	(e)	(e)	P=0.500	P=0.095	(e)			
COCH-ARM / FISHERS	P=0.377	(e)	(e)	P=0.500	P=0.105	(e)			
MAX-ISO-POLY-3	P=0.003**	(e)	(e)	P=0.159	P=0.025*	(e)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Liver							
Hepatodiaphragmatic Nodule							
LESION RATES							
OVERALL(a)	1/10 (10%)	0/0 (0%)	1/1 (100%)	0/0 (0%)	0/10 (0%)	1/10 (10%)	
POLY-3 RATE (b)	1/10.00	0/0.00	1/1.00	0/0.00	0/10.00	1/1.02	
POLY-3 PERCENT (g)	10%	0%	100%	0%	0%	98%	
TERMINAL (d)	1/10 (10%)	0/0 (0%)	1/1 (100%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE	92(T)		92(T)			12	
STATISTICAL TESTS							
POLY 3	(e)	(e)	P=0.146	(e)	P=0.500N	P=0.353	
POLY 1.5	(e)	(e)	P=0.146	(e)	P=0.500N	P=0.379	
POLY 6	(e)	(e)	P=0.146	(e)	P=0.500N	P=0.352	
COCH-ARM / FISHERS	P=0.447N	(e)	P=0.182	(e)	P=0.500N	P=0.763N	
MAX-ISO-POLY-3	(e)	(e)	P=0.022*	(e)	P=0.159N	P=0.244	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

Route: DOSED WATER

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Liver						
Inflammation Chronic						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/1 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/1.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/1 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Lung							
Infiltration Cellular Histiocyte							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)	
FIRST INCIDENCE					92(T)		
STATISTICAL TESTS							
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)	
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)	
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)	
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)	
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Lung: Alveolar Epith								
Hyperplasia								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)		
FIRST INCIDENCE					92(T)			
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)		
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Lymph Node, Mandibular								
Hemorrhage								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/8 (0%)	0/10 (0%)	0/10 (0%)	1/10 (10%)		
POLY-3 RATE (b)	0/10.00	0/10.00	0/8.00	0/10.00	0/10.00	1/1.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	98%		
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/8 (0%)	0/10 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE						12		
STATISTICAL TESTS								
POLY 3	P=0.602	(e)	(e)	(e)	(e)	P=0.244		
POLY 1.5	P=0.524	(e)	(e)	(e)	(e)	P=0.256		
POLY 6	P=0.606	(e)	(e)	(e)	(e)	P=0.243		
COCH-ARM / FISHERS	P=0.111	(e)	(e)	(e)	(e)	P=0.500		
MAX-ISO-POLY-3	P=0.074	(e)	(e)	(e)	(e)	P=0.137		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Lymph Node, Mesenteric								
Hemorrhage								
LESION RATES								
OVERALL(a)	1/10 (10%)	0/10 (0%)	2/10 (20%)	0/10 (0%)	3/10 (30%)	3/10 (30%)		
POLY-3 RATE (b)	1/10.00	0/10.00	2/10.00	0/10.00	3/10.00	3/3.02		
POLY-3 PERCENT (g)	10%	0%	20%	0%	30%	99.3%		
TERMINAL (d)	1/10 (10%)	0/10 (0%)	2/10 (20%)	0/10 (0%)	3/10 (30%)	0/0 (0%)		
FIRST INCIDENCE	92(T)		92(T)		92(T)	12		
STATISTICAL TESTS								
POLY 3	P=0.010**	P=0.500N	P=0.500	P=0.500N	P=0.292	P=0.028*		
POLY 1.5	P=0.009**	P=0.500N	P=0.500	P=0.500N	P=0.292	P=0.035*		
POLY 6	P=0.010**	P=0.500N	P=0.500	P=0.500N	P=0.292	P=0.028*		
COCH-ARM / FISHERS	P=0.047*	P=0.500N	P=0.500	P=0.500N	P=0.291	P=0.291		
MAX-ISO-POLY-3	P=0.018*	P=0.159N	P=0.274	P=0.159N	P=0.138	P=0.032*		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Mesentery									
Accessory Spleen									
LESION RATES									
OVERALL(a)	0/0 (0%)	0/0 (0%)	1/1 (100%)	0/0 (0%)	1/1 (100%)	0/0 (0%)			
POLY-3 RATE (b)	0/0.00	0/0.00	1/1.00	0/0.00	1/1.00	0/0.00			
POLY-3 PERCENT (g)	0%	0%	100%	0%	100%	0%			
TERMINAL (d)	0/0 (0%)	0/0 (0%)	1/1 (100%)	0/0 (0%)	1/1 (100%)	0/0 (0%)			
FIRST INCIDENCE			92(T)		92(T)				
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	(e)	(e)			
POLY 1.5	(e)	(e)	(e)	(e)	(e)	(e)			
POLY 6	(e)	(e)	(e)	(e)	(e)	(e)			
COCH-ARM / FISHERS	(e)	(e)	(e)	(e)	(e)	(e)			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	(e)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Nose								
Exudate								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Pancreas								
Atrophy								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Type: 90-DAY Test Compound: Glyoxal Route: DOSED WATER **CAS Number:** 107-22-2

Time Report Requested: 13:29:44 First Dose M/F: NA / NA

Date Report Requested: 10/17/2014

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Pituitary Gland: Pars Distalis							
Cyst							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Prostate								
Fibrosis								
LESION RATES								
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%		
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE	92(T)							
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N		
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Prostate									
Inflammation									
LESION RATES									
OVERALL(a)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/10 (0%)			
POLY-3 RATE (b)	2/10.00	0/0.00	0/0.00	0/0.00	2/10.00	0/0.02			
POLY-3 PERCENT (g)	20%	0%	0%	0%	20%	0%			
TERMINAL (d)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	2/10 (20%)	0/0 (0%)			
FIRST INCIDENCE	92(T)				92(T)				
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.702	P=0.701N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.702	P=0.675N			
POLY 6	(e)	(e)	(e)	(e)	P=0.702	P=0.702N			
COCH-ARM / FISHERS	P=0.162N	(e)	(e)	(e)	P=0.709N	P=0.237N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=1.000	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Prostate								
Inflammation Chronic								
LESION RATES								
OVERALL(a)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	3/10 (30%)		
POLY-3 RATE (b)	2/10.00	0/0.00	0/0.00	0/0.00	0/10.00	3/3.02		
POLY-3 PERCENT (g)	20%	0%	0%	0%	0%	99.3%		
TERMINAL (d)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE	92(T)					12		
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.227N	P=0.074		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.227N	P=0.088		
POLY 6	(e)	(e)	(e)	(e)	P=0.227N	P=0.073		
COCH-ARM / FISHERS	P=0.382	(e)	(e)	(e)	P=0.237N	P=0.500		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.067N	P=0.071		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Salivary Glands							
Atrophy							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	10/10 (100%)	9/10 (90%)	
POLY-3 RATE (b)	0/10.00	0/10.00	0/10.00	0/10.00	10/10.00	9/9.00	
POLY-3 PERCENT (g)	0%	0%	0%	0%	100%	100%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/10 (0%)	0/10 (0%)	10/10 (100%)	0/0 (0%)	
FIRST INCIDENCE					92(T)	12	
STATISTICAL TESTS							
POLY 3	P=0.000**	(e)	(e)	(e)	P=NA	P=0.000**	
POLY 1.5	P=0.000**	(e)	(e)	(e)	P=NA	P=0.000**	
POLY 6	P=0.000**	(e)	(e)	(e)	P=NA	P=0.000**	
COCH-ARM / FISHERS	P=0.000**	(e)	(e)	(e)	P=0.000**	P=0.000**	
MAX-ISO-POLY-3	P=0.000**	(e)	(e)	(e)	(e)	P=0.000**	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Seminal Vesicle								
Inflammation Chronic								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	98%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE						12		
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.244		
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.256		
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.243		
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Skin								
Acanthosis								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)		
FIRST INCIDENCE					92(T)			
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)		
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Spleen								
Fibrosis								
LESION RATES								
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%		
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE	92(T)							
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N		
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Testes								
Degeneration								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	98%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE						12		
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.244		
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.256		
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.243		
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Thymus								
Atrophy								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			MALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Thymus						
Hemorrhage						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	98%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						12
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.244
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.256
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.243
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Route: DOSED WATER Species/Strain: Rat/F 344/N

Test Type: 90-DAY

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	MALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Thyroid Gland									
Ultimobranchial Cyst									
LESION RATES									
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%			
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE	92(T)								
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N			
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			FEMALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Adrenal Cortex						
Accessory Adrenal Cortical N	lodule					
LESION RATES						
OVERALL(a)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	3/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	30%	0%	0%	0%	0%	0%
TERMINAL (d)	3/10 (30%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE	93(T)					
STATISTICAL TESTS	· ·					
POLY 3	(e)	(e)	(e)	(e)	P=0.095N	P=0.677N
POLY 1.5	(e)	(e)	(e)	(e)	P=0.095N	P=0.639N
POLY 6	(e)	(e)	(e)	(e)	P=0.095N	P=0.678N
COCH-ARM / FISHERS	P=0.031N*	(e)	(e)	(e)	P=0.105N	P=0.105N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.025N*	P=0.499N
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	FEMALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Adrenal Cortex								
Developmental Malformation								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	1/10 (10%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	1/1.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	98%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE						12		
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.244		
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.256		
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.243		
COCH-ARM / FISHERS	P=0.267	(e)	(e)	(e)	(e)	P=0.500		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.137		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Adrenal Medulla								
Inflammation Chronic								
LESION RATES								
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%		
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE	93(T)							
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N		
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			FEMALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Bone Marrow						
Myelofibrosis						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE					93(T)	
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Brain									
Inflammation Chronic									
LESION RATES									
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%			
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE	93(T)								
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N			
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Clitoral Gland									
Inflammation Chronic									
LESION RATES									
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%			
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE	93(T)								
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N			
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Heart								
Cardiomyopathy								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Kidney									
Inflammation Chronic									
LESION RATES									
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%			
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE	93(T)								
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N			
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			FEMALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Kidney						
Mineralization						
LESION RATES						
OVERALL(a)	7/10 (70%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	6/10 (60%)	6/10 (60%)
POLY-3 RATE (b)	7/10.00	0/0.00	0/0.00	0/0.00	6/10.00	6/6.01
POLY-3 PERCENT (g)	70%	0%	0%	0%	60%	99.8%
TERMINAL (d)	7/10 (70%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	6/10 (60%)	0/0 (0%)
FIRST INCIDENCE	93(T)				93(T)	12
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.220
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.255
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.218
COCH-ARM / FISHERS	P=0.408N	(e)	(e)	(e)	P=0.500N	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.327N	P=0.126
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Kidney								
Nephropathy								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)		
FIRST INCIDENCE					93(T)			
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)		
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)		
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Kidney: Papilla								
Cytoplasmic Alteration								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Kidney: Renal Tubule									
Dilatation									
LESION RATES									
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%			
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE									
STATISTICAL TESTS									
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)			
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)			
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)			
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)			
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Liver								
Hepatodiaphragmatic Nodule								
LESION RATES								
OVERALL(a)	0/10 (0%)	2/2 (100%)	1/1 (100%)	0/0 (0%)	1/10 (10%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	2/2.00	1/1.00	0/0.00	1/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	100%	100%	0%	10%	0%		
TERMINAL (d)	0/10 (0%)	2/2 (100%)	1/1 (100%)	0/0 (0%)	1/10 (10%)	0/0 (0%)		
FIRST INCIDENCE		93(T)	93(T)		93(T)			
STATISTICAL TESTS								
POLY 3	(e)	P=NA	P=0.091	(e)	P=0.500	(e)		
POLY 1.5	(e)	P=NA	P=0.091	(e)	P=0.500	(e)		
POLY 6	(e)	P=NA	P=0.091	(e)	P=0.500	(e)		
COCH-ARM / FISHERS	P=0.133N	P=0.015*	P=0.091	(e)	P=0.500	(e)		
MAX-ISO-POLY-3	(e)	P=0.000**	P=0.000**	(e)	P=0.159	(e)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

			FEMALE			
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Liver						
Inflammation Chronic						
LESION RATES						
OVERALL(a)	1/10 (10%)	0/2 (0%)	0/1 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/2.00	0/1.00	0/0.00	1/10.00	0/0.02
POLY-3 PERCENT (g)	10%	0%	0%	0%	10%	0%
TERMINAL (d)	1/10 (10%)	0/2 (0%)	0/1 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)
FIRST INCIDENCE	93(T)				93(T)	
STATISTICAL TESTS						
POLY 3	(e)	P=0.805N	P=0.913N	(e)	P=0.760	P=0.760N
POLY 1.5	(e)	P=0.805N	P=0.913N	(e)	P=0.760	P=0.750N
POLY 6	(e)	P=0.805N	P=0.913N	(e)	P=0.760	P=0.760N
COCH-ARM / FISHERS	P=0.377N	P=0.833N	P=0.909N	(e)	P=0.763N	P=0.500N
MAX-ISO-POLY-3	(e)	P=0.369N	P=0.411N	(e)	P=1.000	P=0.499N
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:44

First Dose M/F: NA / NA

Lab: SRI

FEMALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Lung							
Infiltration Cellular Histiocyte)						
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/1 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/1.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/1 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Lung: Alveolar Epith							
Hyperplasia							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/1 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/1.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/1 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Lymph Node, Mandibular								
Hemorrhage								
LESION RATES								
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Lymph Node, Mesenteric									
Hemorrhage									
LESION RATES									
OVERALL(a)	0/10 (0%)	0/10 (0%)	4/10 (40%)	7/10 (70%)	6/10 (60%)	0/10 (0%)			
POLY-3 RATE (b)	0/10.00	0/10.00	4/10.00	7/10.00	6/10.00	0/0.02			
POLY-3 PERCENT (g)	0%	0%	40%	70%	60%	0%			
TERMINAL (d)	0/10 (0%)	0/10 (0%)	4/10 (40%)	7/10 (70%)	6/10 (60%)	0/0 (0%)			
FIRST INCIDENCE			93(T)	93(T)	93(T)				
STATISTICAL TESTS									
POLY 3	P=0.000**	(e)	P=0.033*	P=0.000**	P<0.001**	(e)			
POLY 1.5	P=0.000**	(e)	P=0.033*	P=0.000**	P<0.001**	(e)			
POLY 6	P=0.000**	(e)	P=0.033*	P=0.000**	P<0.001**	(e)			
COCH-ARM / FISHERS	P=0.503N	(e)	P=0.043*	P=0.002**	P=0.005**	(e)			
MAX-ISO-POLY-3	P=0.000**	(e)	P=0.007**	P=0.000**	P=0.000**	(e)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Mesentery								
Accessory Spleen								
LESION RATES								
OVERALL(a)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)		
POLY-3 RATE (b)	0/0.00	0/0.00	0/0.00	0/0.00	0/0.00	0/0.00		
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%		
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)		
FIRST INCIDENCE								
STATISTICAL TESTS								
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML		
Nose								
Exudate								
LESION RATES								
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)		
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02		
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%		
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)		
FIRST INCIDENCE	93(T)							
STATISTICAL TESTS								
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N		
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N		
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N		
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N		
HISTCONT SAME RTE								
HISTCONT ALL RTES								
CURR VS HC SAME RTE								
CURR VS HC ALL RTES								

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Ovary									
Cyst									
LESION RATES									
OVERALL(a)	0/10 (0%)	1/1 (100%)	1/1 (100%)	0/0 (0%)	1/10 (10%)	0/10 (0%)			
POLY-3 RATE (b)	0/10.00	1/1.00	1/1.00	0/0.00	1/10.00	0/0.02			
POLY-3 PERCENT (g)	0%	100%	100%	0%	10%	0%			
TERMINAL (d)	0/10 (0%)	1/1 (100%)	1/1 (100%)	0/0 (0%)	1/10 (10%)	0/0 (0%)			
FIRST INCIDENCE		93(T)	93(T)		93(T)				
STATISTICAL TESTS									
POLY 3	(e)	P=0.091	P=0.091	(e)	P=0.500	(e)			
POLY 1.5	(e)	P=0.091	P=0.091	(e)	P=0.500	(e)			
POLY 6	(e)	P=0.091	P=0.091	(e)	P=0.500	(e)			
COCH-ARM / FISHERS	P=0.235N	P=0.091	P=0.091	(e)	P=0.500	(e)			
MAX-ISO-POLY-3	(e)	P=0.000**	P=0.000**	(e)	P=0.159	(e)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Pancreas									
Atrophy									
LESION RATES									
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	10%	0%	0%	0%	0%	0%			
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE	93(T)								
STATISTICAL TESTS									
POLY 3	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500N	P=0.750N			
POLY 6	(e)	(e)	(e)	(e)	P=0.500N	P=0.760N			
COCH-ARM / FISHERS	P=0.267N	(e)	(e)	(e)	P=0.500N	P=0.500N			
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159N	P=0.499N			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE							
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Pituitary Gland: Pars Distalis							
Cyst							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	1/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	10%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)	0/0 (0%)	
FIRST INCIDENCE					93(T)		
STATISTICAL TESTS							
POLY 3	(e)	(e)	(e)	(e)	P=0.500	(e)	
POLY 1.5	(e)	(e)	(e)	(e)	P=0.500	(e)	
POLY 6	(e)	(e)	(e)	(e)	P=0.500	(e)	
COCH-ARM / FISHERS	P=0.733	(e)	(e)	(e)	P=0.500	(e)	
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.159	(e)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE								
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML			
Salivary Glands									
Atrophy									
LESION RATES									
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)			
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02			
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%			
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)			
FIRST INCIDENCE									
STATISTICAL TESTS									
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)			
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)			
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)			
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)			
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)			
HISTCONT SAME RTE									
HISTCONT ALL RTES									
CURR VS HC SAME RTE									
CURR VS HC ALL RTES									

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Skin							
Acanthosis							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML
Spleen						
Fibrosis						
LESION RATES						
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)
FIRST INCIDENCE						
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)
HISTCONT SAME RTE						
HISTCONT ALL RTES						
CURR VS HC SAME RTE						
CURR VS HC ALL RTES						

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014
Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Thymus							
Atrophy							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	2/10 (20%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	2/2.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	99%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE						12	
STATISTICAL TESTS							
POLY 3	(e)	(e)	(e)	(e)	(e)	P=0.041*	
POLY 1.5	(e)	(e)	(e)	(e)	(e)	P=0.046*	
POLY 6	(e)	(e)	(e)	(e)	(e)	P=0.040*	
COCH-ARM / FISHERS	P=0.089	(e)	(e)	(e)	(e)	P=0.237	
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	(e)	P=0.036*	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Thymus							
Hemorrhage							
LESION RATES							
OVERALL(a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/0.00	0/10.00	0/0.02	
POLY-3 PERCENT (g)	0%	0%	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	0/0 (0%)	
FIRST INCIDENCE							
STATISTICAL TESTS							
POLY 3	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	(n)	(n)	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY

Route: DOSED WATER Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Thyroid Gland							
Ultimobranchial Cyst							
LESION RATES							
OVERALL(a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	3/10 (30%)	0/10 (0%)	
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/0.00	3/10.00	0/0.02	
POLY-3 PERCENT (g)	10%	0%	0%	0%	30%	0%	
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	3/10 (30%)	0/0 (0%)	
FIRST INCIDENCE	93(T)				93(T)		
STATISTICAL TESTS							
POLY 3	(e)	(e)	(e)	(e)	P=0.292	P=0.760N	
POLY 1.5	(e)	(e)	(e)	(e)	P=0.292	P=0.750N	
POLY 6	(e)	(e)	(e)	(e)	P=0.292	P=0.760N	
COCH-ARM / FISHERS	P=0.371N	(e)	(e)	(e)	P=0.291	P=0.500N	
MAX-ISO-POLY-3	(e)	(e)	(e)	(e)	P=0.138	P=0.499N	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

Test Type: 90-DAY
Route: DOSED WATER

Species/Strain: Rat/F 344/N

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Compound: Glyoxal CAS Number: 107-22-2

Date Report Requested: 10/17/2014 Time Report Requested: 13:29:45

First Dose M/F: NA / NA

Lab: SRI

	FEMALE						
DOSE	VEHICLE CONTROL	1 MG/ML	2 MG/ML	4 MG/ML	8 MG/ML	16 MG/ML	
Uterus							
Hydrometra							
LESION RATES							
OVERALL(a)	2/10 (20%)	2/2 (100%)	1/1 (100%)	3/3 (100%)	4/10 (40%)	0/10 (0%)	
POLY-3 RATE (b)	2/10.00	2/2.00	1/1.00	3/3.00	4/10.00	0/0.02	
POLY-3 PERCENT (g)	20%	100%	100%	100%	40%	0%	
TERMINAL (d)	2/10 (20%)	2/2 (100%)	1/1 (100%)	3/3 (100%)	4/10 (40%)	0/0 (0%)	
FIRST INCIDENCE	93(T)	93(T)	93(T)	93(T)	93(T)		
STATISTICAL TESTS							
POLY 3	P=0.401	P=0.053	P=0.286	P=0.010**	P=0.318	P=0.701N	
POLY 1.5	P=0.408	P=0.053	P=0.286	P=0.010**	P=0.318	P=0.676N	
POLY 6	P=0.401	P=0.053	P=0.286	P=0.010**	P=0.318	P=0.702N	
COCH-ARM / FISHERS	P=0.031N*	P=0.091	P=0.273	P=0.035*	P=0.314	P=0.237N	
MAX-ISO-POLY-3	P=0.704N	P=0.023*	P=0.090	P=0.005**	P=0.172	P=0.499N	
HISTCONT SAME RTE							
HISTCONT ALL RTES							
CURR VS HC SAME RTE							
CURR VS HC ALL RTES							

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Test Type: 90-DAY
Route: DOSED WATER
Species/Strain: Rat/F 344/N

Experiment Number: 88038-01

Test Compound: Glyoxal **CAS Number:** 107-22-2

Date Report Requested: 10/17/2014 **Time Report Requested:** 13:29:45

First Dose M/F: NA / NA

Lab: SRI

LEGEND

Ν

Indicates a negative trend for all tests

LLGLIND	
(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<=0.05).
**	To the right of any statistical result, indicates significance at (P<=0.01).

** END OF REPORT **

The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.