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8EHQ-0698-14217

The Goodyear Tire & Rubber Company

Akron, Ohio 44316-0001

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24 June 1998

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Attn: Section 8(e) Coordinator
Office of Pollution Prevention and Toxics (OPPT)
U.S. Environmental Protection Agency
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Contains No CBI

Dear Ladies/Gentlemen:

Subject: **TSCA Section 8(e) Notice**

This submittal does not contain Confidential Business Information.

On 11 June 1998, The Goodyear Tire & Rubber Company received copies of draft results of the Functional Observation Battery (FOB) evaluation for a Goodyear sponsored 28-day oral (gavage) toxicity study being performed by WIL Research Laboratories, Inc. The current identity of the test material is as follows:

CAS Name: Formaldehyde, reaction products with 1-dodecanethiol and 4-nonylphenol

CAS Number: 164907-73-7

PLEASE NOTE: On May 1, 1998, a correction to The Goodyear Tire & Rubber Company's Premanufacture Notice (PMN) P-86-435 was submitted to the EPA. In this correction submittal, Goodyear requested that the chemical identity of the test material be changed to the following:

CAS Name: Formaldehyde, reaction products with branched 4-nonylphenol and 1-dodecanethiol

CAS Number: 203742-97-6

The preliminary results (that may indicate a substantial risk) indicate an effect on the neuromuscular observations in the Functional Observation Battery in female rats given daily doses by gavage of the test material for 28 consecutive days at the highest dosage tested, 2500 mg/kg-day. Consequently, under the requirements of Section 8(e) of the Toxic Substances Control Act and EPA's Statement on Interpretation and Enforcement Policy, 43 Fed.Reg. 1110 (16 March 1978), The Goodyear Tire & Rubber Company is providing the EPA with copies of a Preliminary Summary of Neurobehavioral Observations and draft tables.

In this study, the mean hindlimb grip strength value in the 2500 mg/kg-day group females was significantly ($p<0.01$) lower than the control group mean value at the end of the dosing period. Further, the mean footsplay value in the 2500 mg/kg-day group females was also significantly ($p<0.05$) lower than the control group mean value at the end of the dosing period. Following a two week recovery period, values for hindlimb grip strength and hindlimb footsplay were comparable to control group values.

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These findings have not been reported in final form. However, upon completion, the final report will be forwarded to EPA.

My address and telephone number are as follows:

The Goodyear Tire & Rubber Company
Department 100D
1144 East Market Street
Akron, Ohio 44316-0001
Telephone: (330) 796-2362

Sincerely,

Michael W Smith
Section Manager, Chemical Information
Systems & Regulatory Affairs

attachments (2)

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Preliminary Summary of Neurobehavioral Observations Following Administration of Wingstay K to Rats

(This summary was not audited by WIL Research Laboratories, Inc. Quality Assurance Unit and contains unaudited data)

Study No.: WIL-140009

Prepared for:

Goodyear Tire and Rubber Company
1485 East Archwood Avenue
Akron, OH 44306

I. Introduction

Potential neurobehavioral effects of administration of Wingstay K in the Crl:CD(BD)®BR rat were evaluated using a Functional Observational Battery (FOB) and by assessing locomotor activity. The test article was administered orally (gavage) for 28 consecutive days at dosage levels of 0, 125, 400, 1000 and 2500 mg/kg/day. FOB and Locomotor activity were evaluated for 5 males and 5 females from each dose group pre-study and during the 4th week of test article administration (study week 3). FOB and locomotor activity were also evaluated for control and 2500 mg/kg/day following a 14-day recovery period (study week 5).

II. Results

A. Functional Observational Battery [FOB]:

1. Home Cage Observations (Tables 1-3):

No test article related differences were apparent between the control and treated groups when the home cage observations were evaluated during the pretest period and study weeks 3 and 5 (recovery). A statistically significant increase in the number of females in the 2500 mg/kg/day group were observed as sitting or standing normally at week 5. However, increases in this parameter are not considered to be of toxicologic significance.

2. Handling Observations (Tables 4-6):

No remarkable differences were apparent between the control and treated groups when the handling observations were evaluated during the pretest period and study weeks 3 and 5 (recovery).

3. Open Field Observations (Tables 7-9):

No remarkable differences were apparent between the control and treated groups when the open field observations were evaluated during the pretest period and study weeks 3 and 5 (recovery).

4. Sensory Observations (Tables 10-12):

No remarkable differences were apparent between the control and treated groups when sensory observations were evaluated during the pretest period and weeks 3 and 5 (recovery).

5. Neuromuscular Observations (Tables 13-15):

Neuromuscular effects observed in the 2500 mg/kg/day group females included decreased hindlimb grip strength and decreased hindlimb footsplay at study week 3.

The mean hindlimb grip strength values in the 2500 mg/kg/day group females was significantly ($p < 0.01$) lower than the control group value at study week 3. Following a two week recovery period (study week 5), the grip strength value for the 2500 mg/kg/day group females was comparable to the control group values.

The mean hindlimb footsplay value in the 2500 mg/kg/day group females was significantly ($p < 0.05$) lower than the control group value at study week 3. Following a two week recovery period, the hindlimb footsplay value in the 2500 mg/kg/day females was still lower than the control group value. However, the reduction was not statistically significant, and the value was increased relative to the week 3 value for the 2500 mg/kg/day females. No other test article related differences from the control

group were observed for female animals when neuromuscular observations were evaluated prestudy and during study weeks 3 and 5 (recovery).

No remarkable differences were apparent between males in the control and treated groups when neuromuscular observations were evaluated.

6. Physiological Observations (Tables 16-18):

Mean body temperature in the 2500 mg/kg/day group females was significantly ($p < 0.05$) increased at the study week 5 (recovery) evaluation. However a similar increase was not observed at the study week 3 evaluation. Therefore, no relationship to treatment was apparent.

No test article related differences were apparent between the control and treated groups when physiological observations were evaluated during the pretest period and study weeks 3 and 5 (recovery).

B. Locomotor Activity (Tables 19-21):

No differences between the control and treated groups in mean ambulatory and total motor activity counts could be attributed to the test article. A statistically significant increase in mean ambulatory and total motor activities counts was observed for the 1000 mg/kg/day group males at week 3 for the subsession 4 evaluation. However, a similar increase was not observed for the 2500 mg/kg/day males. Therefore, no relationship to treatment was apparent.

II. Summary of Neurobehavioral Observations

Oral (gavage) administration of Wingstay K to rats at dosages of 0, 125, 400, 1000 and 2500 mg/kg/day for 28 consecutive days resulted in treatment

related decreased hindlimb grip strength and decreased hindlimb footsplay in the 2500 mg/kg/day group females when evaluated during the 4th week of test article administration (study week 3); the decreases were statistically significant ($p < 0.01$ and < 0.05, respectively) as compared to control group values. Following a two week recovery period, values for hindlimb grip strength and hindlimb footsplay for the 2500 mg/kg/day group females were comparable to control group values, indicating that the effects were reversible. No other treatment related effects were apparent between treated and control group animals in functional observational battery or locomotor activity evaluations.

Based on the results of the functional observational battery, one (neuromuscular) of the six functional domains described by Moser (Journal of the American College of Toxicology, 1991. Vol. 10, pp. 661-669) was affected by daily oral (gavage) administration of Wingstay K to female rats for 28 consecutive days at a dosage level of 2500 mg/kg/day. This finding was reversible after a two week recovery period.

Summary Prepared by:

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Staff Toxicologist, Developmental,
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6/15/98
Date

Reviewed by:

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6/19/98
Date

Jeannie B. Kirkpatrick, M.S.
Staff Toxicologist

6/19/98
Date

HOME CAGE OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
POSTURE					
SITTING OR STANDING NORMALLY	3	4	4	3	3
ASLEEP, LYING ON SIDE OR CURLED UP	0	1	1	1	1
ALERT, ORIENTED TOWARD OBSERVER	2	0	0	1	1
CONVULSIONS - CLONIC					
ABSENT	5	5	5	5	5
CONVULSIONS - TONIC					
ABSENT	5	5	5	5	5
TREMORS					
NONE	5	5	5	5	5
BITING					
NONE	5	5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	4	4	4	4
EYELIDS SLIGHTLY DROOPING	0	1	0	1	1
EYELIDS COMPLETELY SHUT	0	0	1	0	0
FECES CONSISTENCY					
PELLETS	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HOME CAGE OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
POSTURE					
SITTING OR STANDING NORMALLY	2	4	4	2	1
ASLEEP, LYING ON SIDE OR CURLED UP	2	1	0	2	0
ALERT, ORIENTED TOWARD OBSERVER	1	0	1	1	4
CONVULSIONS - CLONIC					
ABSENT	5	5	5	5	5
CONVULSIONS - TONIC					
ABSENT	5	5	5	5	5
TREMORS					
NONE	5	5	5	5	5
BITING					
NONE	5	5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	3	3	5	3	5
EYELIDS SLIGHTLY DROOPING	1	2	0	0	0
DROOPING EYELIDS (HALF-CLOSED)	1	0	0	0	0
EYELIDS COMPLETELY SHUT	0	0	0	2	0
FECES CONSISTENCY					
PELLETS	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HOME CAGE OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
POSTURE					
SITTING OR STANDING NORMALLY	4	0	0	0	2
ASLEEP, LYING ON SIDE OR CURLED UP	1	0	0	0	0
ALERT, ORIENTED TOWARD OBSERVER	0	0	0	0	3
CONVULSIONS - CLONIC					
ABSENT	5	0	0	0	5
CONVULSIONS - TONIC					
ABSENT	5	0	0	0	5
TREMORS					
NONE	5	0	0	0	5
BITING					
NONE	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	4	0	0	0	5
EYELIDS SLIGHTLY DROOPING	1	0	0	0	0
FECES CONSISTENCY					
PELLETS	2	0	0	0	3
PELLETS ABSENT	3	0	0	0	2

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HOME CAGE OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
POSTURE					
SITTING OR STANDING NORMALLY	0	0	0	0	4*
ASLEEP, LYING ON SIDE OR CURLED UP	1	0	0	0	0
ALERT, ORIENTED TOWARD OBSERVER	4	0	0	0	1
CONVULSIONS - CLONIC					
ABSENT	5	0	0	0	5
CONVULSIONS - TONIC					
ABSENT	5	0	0	0	5
TREMORS					
NONE	5	0	0	0	5
BITING					
NONE	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	4	0	0	0	5
DROOPING EYELIDS (HALF-CLOSED)	1	0	0	0	0
FECES CONSISTENCY					
PELLETS	4	0	0	0	4
PELLETS ABSENT	1	0	0	0	1

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
* = SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HOME CAGE OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
POSTURE					
SITTING OR STANDING NORMALLY	4	0	0	0	2
ASLEEP, LYING ON SIDE OR CURLED UP	1	0	0	0	0
ALERT, ORIENTED TOWARD OBSERVER	0	0	0	0	3
CONVULSIONS - CLONIC					
ABSENT	5	0	0	0	5
CONVULSIONS - TONIC					
ABSENT	5	0	0	0	5
TREMORS					
NONE	5	0	0	0	5
BITING					
NONE	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	4	0	0	0	5
EYELIDS SLIGHTLY DROOPING	1	0	0	0	0
FECES CONSISTENCY					
PELLETS	2	0	0	0	3
PELLETS ABSENT	3	0	0	0	2

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HOME CAGE OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
POSTURE					
SITTING OR STANDING NORMALLY	0	0	0	0	4*
ASLEEP, LYING ON SIDE OR CURLED UP	1	0	0	0	0
ALERT, ORIENTED TOWARD OBSERVER	4	0	0	0	1
CONVULSIONS - CLONIC					
ABSENT	5	0	0	0	5
CONVULSIONS - TONIC					
ABSENT	5	0	0	0	5
TREMORS					
NONE	5	0	0	0	5
BITING					
NONE	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	4	0	0	0	5
DROOPING EYELIDS (HALF-CLOSED)	1	0	0	0	0
FECES CONSISTENCY					
PELLETS	4	0	0	0	4
PELLETS ABSENT	1	0	0	0	1

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
* = SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 4
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	5	5	5	5
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	3	4	4	3	2
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	2	1	1	2	3
LACRIMATION					
NONE	5	5	5	5	5
CHROMODACRYORRHEA					
ABSENT	5	5	5	5	5
SALIVATION					
NONE	5	5	5	5	5
PILOERECTION					
NONE	5	5	5	5	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	5	5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	5	5	5	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 4
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
RESPIRATORY CHARACTER					
NORMAL	5	5	5	5	5
RED DEPOSITS - eyes					
ABSENT	5	5	5	5	5
RED DEPOSITS - nose					
ABSENT	5	5	5	5	5
RED DEPOSITS - mouth					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - eyes					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - nose					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - mouth					
ABSENT	5	5	5	5	5
MUCOUS MEMBRANES - color					
PINK	5	5	5	5	5
EYES - color					
PINK	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 4
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
SKIN - color					
PINK	5	5	5	5	5
EYE PROMINENCE					
NORMAL	5	5	5	5	5
MUSCLE TONE					
MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 4
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	5	4	4	5
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE	0	0	1	1	0
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	2	3	3	4	4
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	3	2	2	1	1
LACRIMATION					
NONE	5	5	5	5	5
CHROMODACRYORRHEA					
ABSENT	5	5	5	5	5
SALIVATION					
NONE	5	5	5	5	5
PILOERECTION					
NONE	5	5	5	5	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	5	4	5	5	4
SLIGHTLY SOILED	0	1	0	0	1
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	5	5	5	5
RESPIRATORY CHARACTER					
NORMAL	5	5	5	5	5
RED DEPOSITS - eyes					
ABSENT	5	5	5	5	5
RED DEPOSITS - nose					
ABSENT	5	5	5	5	5
RED DEPOSITS - mouth					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - eyes					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - nose					
ABSENT	5	5	5	5	5
CRUSTY DEPOSITS - mouth					
ABSENT	5	5	5	5	5
MUCOUS MEMBRANES - color					
PINK	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
EYES - color					
PINK	5	5	5	5	5
SKIN - color					
PINK	5	5	5	5	5
EYE PROMINENCE					
NORMAL	5	5	5	5	5
MUSCLE TONE					
MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	0	0	0	5
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	5	0	0	0	4
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	0	0	0	0	1
LACRIMATION					
NONE	5	0	0	0	5
CHROMODACRYORRHEA					
ABSENT	5	0	0	0	5
SALIVATION					
NONE	5	0	0	0	5
PILOERECTION					
NONE	5	0	0	0	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	4	0	0	0	5
SLIGHTLY SOILED	1	0	0	0	0
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	0	0	0	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
RESPIRATORY CHARACTER					
NORMAL	5	0	0	0	5
RED DEPOSITS - eyes					
ABSENT	5	0	0	0	5
RED DEPOSITS - nose					
ABSENT	5	0	0	0	5
RED DEPOSITS - mouth					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - eyes					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - nose					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - mouth					
ABSENT	5	0	0	0	5
MUCOUS MEMBRANES - color					
PINK	5	0	0	0	5
EYES - color					
PINK	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
SKIN - color					
PINK	5	0	0	0	5
EYE PROMINENCE					
NORMAL	5	0	0	0	5
MUSCLE TONE					
MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	0	0	0	5
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	4	0	0	0	2
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	1	0	0	0	3
LACRIMATION					
NONE	5	0	0	0	5
CHROMODACRYORRHEA					
ABSENT	5	0	0	0	5
SALIVATION					
NONE	5	0	0	0	5
PILOERECTION					
NONE	5	0	0	0	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	0	0	0	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 5
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
RESPIRATORY CHARACTER					
NORMAL	5	0	0	0	5
RED DEPOSITS - eyes					
ABSENT	5	0	0	0	5
RED DEPOSITS - nose					
ABSENT	5	0	0	0	5
RED DEPOSITS - mouth					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - eyes					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - nose					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - mouth					
ABSENT	5	0	0	0	5
MUCOUS MEMBRANES - color					
PINK	5	0	0	0	5
EYES - color					
PINK	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
SKIN - color					
PINK	5	0	0	0	5
EYE PROMINENCE					
NORMAL	5	0	0	0	5
MUSCLE TONE					
MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	0	0	0	5
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	5	0	0	0	4
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	0	0	0	0	1
LACRIMATION					
NONE	5	0	0	0	5
CHROMODACRYORRHEA					
ABSENT	5	0	0	0	5
SALIVATION					
NONE	5	0	0	0	5
PILOERECTION					
NONE	5	0	0	0	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	4	0	0	0	5
SLIGHTLY SOILED	1	0	0	0	0
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	0	0	0	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
RESPIRATORY CHARACTER NORMAL	5	0	0	0	5
RED DEPOSITS - eyes ABSENT	5	0	0	0	5
RED DEPOSITS - nose ABSENT	5	0	0	0	5
RED DEPOSITS - mouth ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - eyes ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - nose ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - mouth ABSENT	5	0	0	0	5
MUCOUS MEMBRANES - color PINK	5	0	0	0	5
EYES - color PINK	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
SKIN - color PINK	5	0	0	0	5
EYE PROMINENCE NORMAL	5	0	0	0	5
MUSCLE TONE MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP	5	0	0	0	5
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE	4	0	0	0	2
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION	1	0	0	0	3
LACRIMATION					
NONE	5	0	0	0	5
CHROMODACRYORRHEA					
ABSENT	5	0	0	0	5
SALIVATION					
NONE	5	0	0	0	5
PILOERECTION					
NONE	5	0	0	0	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED	5	0	0	0	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN	5	0	0	0	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
RESPIRATORY CHARACTER					
NORMAL	5	0	0	0	5
RED DEPOSITS - eyes					
ABSENT	5	0	0	0	5
RED DEPOSITS - nose					
ABSENT	5	0	0	0	5
RED DEPOSITS - mouth					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - eyes					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - nose					
ABSENT	5	0	0	0	5
CRUSTY DEPOSITS - mouth					
ABSENT	5	0	0	0	5
MUCOUS MEMBRANES - color					
PINK	5	0	0	0	5
EYES - color					
PINK	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

HANDLING OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
SKIN - color					
PINK	5	0	0	0	5
EYE PROMINENCE					
NORMAL	5	0	0	0	5
MUSCLE TONE					
MUSCLE IS FIRM BUT NOT HARD (NORMAL)	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

OPEN FIELD OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
TIME TO FIRST STEP (seconds)	: MEAN	0.6	0.6	0.7	0.5	0.6
	S.D.	0.13	0.04	0.35	0.09	0.05
MOBILITY						
NORMAL		5	5	5	5	5
GAIT						
NORMAL		5	5	5	5	5
CONVULSIONS - CLONIC						
ABSENT		5	5	5	5	5
CONVULSIONS - TONIC						
ABSENT		5	5	5	5	5
TREMORS						
NONE		5	5	5	5	5
GAIT SCORE						
NORMAL		5	5	5	5	5
AROUSAL						
NORMAL: ALERT, EXPLORATORY MOVEMENTS		5	5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR						
NONE		5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

OPEN FIELD OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
REARING	: MEAN	7.6	9.8	5.2	8.0	7.8
	S.D.	1.52	4.27	6.22	3.32	2.39
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	0.8	1.2	1.2	0.4	1.0
	S.D.	1.10	1.30	0.45	0.55	1.22
URINATION	: MEAN	0.0	0.0	0.0	0.2	0.0
	S.D.	0.00	0.00	0.00	0.45	0.00
DEFECATION	: MEAN	1.4	1.0	0.4	0.0	0.4
	S.D.	1.52	1.41	0.89	0.00	0.89

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

OPEN FIELD OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
TIME TO FIRST STEP (seconds)	: MEAN	0.5	0.5	0.8	0.6	0.6
	S.D.	0.04	0.09	0.45	0.09	0.13
MOBILITY						
NORMAL		5	5	5	5	5
GAIT						
NORMAL		5	5	5	5	5
CONVULSIONS - CLONIC						
ABSENT		5	5	5	5	5
CONVULSIONS - TONIC						
ABSENT		5	5	5	5	5
TREMORS						
NONE		5	5	5	5	5
GAIT SCORE						
NORMAL		5	5	5	5	5
AROUSAL						
NORMAL: ALERT, EXPLORATORY MOVEMENTS		5	5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR						
NONE		5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

OPEN FIELD OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
REARING	: MEAN	9.4	8.6	8.6	10.8	7.8
	S.D.	2.07	2.41	2.88	1.92	1.92
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	1.0	1.4	0.6	0.6	0.6
	S.D.	0.71	1.34	0.55	0.89	0.55
URINATION	: MEAN	0.0	0.2	0.0	0.2	0.0
	S.D.	0.00	0.45	0.00	0.45	0.00
DEFECATION	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
NO REACTION	1	0	0	0	0
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	5
TOUCH RESPONSE					
NO REACTION	2	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	4	0	0	0	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	0
TAIL PINCH RESPONSE					
NO REACTION	1	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
TOUCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	5	0	0	0	5
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 9
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
TIME TO FIRST STEP (seconds)	: MEAN	0.7	0.0	0.0	0.0	0.5
	S.D.	0.09	0.00	0.00	0.00	0.11
MOBILITY						
NORMAL		5	0	0	0	5
GAIT						
NORMAL		5	0	0	0	5
CONVULSIONS - CLONIC						
ABSENT		5	0	0	0	5
CONVULSIONS - TONIC						
ABSENT		5	0	0	0	5
TREMORS						
NONE		5	0	0	0	5
GAIT SCORE						
NORMAL		5	0	0	0	5
AROUSAL						
NORMAL: ALERT, EXPLORATORY MOVEMENTS		5	0	0	0	5
BIZARRE/STEREOTYPIC BEHAVIOR						
NONE		5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

OPEN FIELD OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
REARING	: MEAN	6.0	0.0	0.0	0.0	5.2
	S.D.	2.00	0.00	0.00	0.00	3.27
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	0.4	0.0	0.0	0.0	0.8
	S.D.	0.55	0.00	0.00	0.00	0.84
URINATION	: MEAN	0.2	0.0	0.0	0.0	0.6
	S.D.	0.45	0.00	0.00	0.00	0.55
DEFECATION	: MEAN	0.6	0.0	0.0	0.0	0.0
	S.D.	1.34	0.00	0.00	0.00	0.00

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 9
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
TIME TO FIRST STEP (seconds)	: MEAN	0.5	0.0	0.0	0.0	0.5
	S.D.	0.11	0.00	0.00	0.00	0.05
MOBILITY						
NORMAL		5	0	0	0	5
GAIT						
NORMAL		5	0	0	0	5
CONVULSIONS - CLONIC						
ABSENT		5	0	0	0	5
CONVULSIONS - TONIC						
ABSENT		5	0	0	0	5
TREMORS						
NONE		5	0	0	0	5
GAIT SCORE						
NORMAL		4	0	0	0	5
CONSIDERABLE IMPAIRMENT, WITHOUT FALLING		1	0	0	0	0
AROUSAL						
NORMAL: ALERT, EXPLORATORY MOVEMENTS		3	0	0	0	4
SOMEWHAT HIGH: SLIGHT EXCITEMENT, TENSE, SUDDEN DARTING OR FREEZING		2	0	0	0	1
BIZARRE/STEREOTYPIC BEHAVIOR						
NONE		5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

OPEN FIELD OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
REARING	: MEAN	16.0	0.0	0.0	0.0	13.8
	S.D.	6.28	0.00	0.00	0.00	2.68
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	1.2	0.0	0.0	0.0	0.6
	S.D.	0.84	0.00	0.00	0.00	0.55
URINATION	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
DEFECATION	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 10
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
APPROACH RESPONSE					
NO REACTION	0	1	0	0	0
SLOW APPROACH, SNIFFING OR TURNING AWAY	5	4	5	5	5
TOUCH RESPONSE					
NO REACTION	0	0	0	1	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	5	5	5	4	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	0	0	0	1
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	5	3	4	4	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	2	1	1	2
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	2	3	1	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	3	2	4	2
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	5	5	5	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	5	5	5	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	5	5	5	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 10
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
HINDLIMB EXTENSION					
NO HINDLIMB EXTENSION	0	1	0	0	0
HINDLIMB EXTENSION PRESENT	5	4	5	5	5
AIR RIGHTING REFLEX					
NORMAL	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 10
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
APPROACH RESPONSE					
NO REACTION	0	0	1	1	0
SLOW APPROACH, SNIFFING OR TURNING AWAY	5	4	4	4	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	1	0	0	1
TOUCH RESPONSE					
NO REACTION	0	0	1	0	0
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	5	4	5	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	2
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	3	3	2	2	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	2	3	3	2
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	3	2	1	1
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	2	3	4	4
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	5	5	5	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	5	5	5	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 10
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	5	5	5	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	5	5	5	5
AIR RIGHTING REFLEX					
NORMAL	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 11
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
NO REACTION	1	0	0	0	0
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	5
TOUCH RESPONSE					
NO REACTION	2	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	4	0	0	0	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	0
TAIL PINCH RESPONSE					
NO REACTION	1	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 11
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
TOUCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	5	0	0	0	5
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX.
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 11
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
NO REACTION	1	0	0	0	0
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	5
TOUCH RESPONSE					
NO REACTION	2	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	4	0	0	0	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	0
TAIL PINCH RESPONSE					
NO REACTION	1	0	0	0	1
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	3
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	0	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

SENSORY OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 12
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
APPROACH RESPONSE					
SLOW APPROACH, SNIFFING OR TURNING AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
TOUCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	4	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	1	0	0	0	1
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	5	0	0	0	5
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY	3	0	0	0	4
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	2	0	0	0	1
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	0	0	0	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT	5	0	0	0	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT	5	0	0	0	5
FORELIMB EXTENSION					
FORELIMB EXTENSION PRESENT	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 12
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

SENSORY OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	0	0	0	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT	5	0	0	0	5
AIR RIGHTING REFLEX					
NORMAL	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

UNAUDITED TABLE 13

A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS

FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

NEUROMUSCULAR OBSERVATIONS

MALES

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:			1	2	3	4	5
NUMBER TESTED:			5	5	5	5	5
HINDLIMB EXTENSOR STRENGTH							
HINDLIMB RESISTANCE PRESENT			5	5	5	5	5
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE:	MEAN	449.8	371.6	380.0	348.6	480.0
		S.D.	72.92	118.47	98.78	96.40	76.50
	HIND:	MEAN	216.6	168.2	185.0	164.8	216.8
		S.D.	59.14	46.49	37.44	53.84	84.48
ROTAROD PERFORMANCE (seconds)	:	MEAN	84.4	85.7	60.7	56.1	92.1
		S.D.	50.54	48.22	54.55	52.00	45.61
HINDLIMB FOOTSPLAY (mm)	:	MEAN	86.0	84.8	72.0	77.2	92.4
		S.D.	8.75	10.66	13.29	2.17	8.91

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

NEUROMUSCULAR OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
HINDLIMB EXTENSOR STRENGTH		5	5	5	5	5
HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN	380.0	400.0	280.0	386.6	406.6
	S.D.	76.98	68.20	57.46	63.78	90.07
	HIND: MEAN	151.6	214.8	165.0	201.8	180.0
	S.D.	32.90	41.00	42.07	63.96	17.36
ROTAROD PERFORMANCE (seconds)	: MEAN	73.1	87.0	87.1	79.0	34.8
	S.D.	45.96	45.51	46.11	41.17	18.02
HINDLIMB FOOTSPLAY (mm)	: MEAN	80.2	82.2	80.2	87.6	70.4
	S.D.	8.44	12.87	2.95	7.06	10.76

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

NEUROMUSCULAR OBSERVATIONS
MALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
HINDLIMB EXTENSOR STRENGTH						
HINDLIMB RESISTANCE PRESENT		5	0	0	0	5
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN	660.0	0.0	0.0	0.0	575.0
	S.D.	171.63	0.00	0.00	0.00	235.32
	HIND: MEAN	430.0	0.0	0.0	0.0	441.8
	S.D.	114.13	0.00	0.00	0.00	131.14
ROTAROD PERFORMANCE (seconds)	: MEAN	79.2	0.0	0.0	0.0	120.0
	S.D.	56.59	0.00	0.00	0.00	0.00
HINDLIMB FOOTSPLAY (mm)	: MEAN	105.4	0.0	0.0	0.0	111.8
	S.D.	13.01	0.00	0.00	0.00	18.19

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 14
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

NEUROMUSCULAR OBSERVATIONS
FEMALES
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
HINDLIMB EXTENSOR STRENGTH		5	0	0	0	5
HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN	568.4	0.0	0.0	0.0	533.4
	S.D.	85.55	0.00	0.00	0.00	295.50
	HIND: MEAN	356.8	0.0	0.0	0.0	346.6
	S.D.	122.73	0.00	0.00	0.00	58.54
ROTAROD PERFORMANCE (seconds)	: MEAN	102.5	0.0	0.0	0.0	72.5
	S.D.	39.04	0.00	0.00	0.00	44.72
HINDLIMB FOOTSPLAY (mm)	: MEAN	80.0	0.0	0.0	0.0	63.4
	S.D.	15.73	0.00	0.00	0.00	13.69

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 15

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NEUROMUSCULAR OBSERVATIONS

MALES

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
HINDLIMB EXTENSOR STRENGTH						
HINDLIMB RESISTANCE PRESENT		5	0	0	0	5
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN	660.0	0.0	0.0	0.0	575.0
	S.D.	171.63	0.00	0.00	0.00	235.32
	HIND: MEAN	430.0	0.0	0.0	0.0	441.8
	S.D.	114.13	0.00	0.00	0.00	131.14
ROTAROD PERFORMANCE (seconds)	: MEAN	79.2	0.0	0.0	0.0	120.0
	S.D.	56.59	0.00	0.00	0.00	0.00
HINDLIMB FOOTSPLAY (mm)	: MEAN	105.4	0.0	0.0	0.0	111.8
	S.D.	13.01	0.00	0.00	0.00	18.19

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

NEUROMUSCULAR OBSERVATIONS

FEMALES

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:			1	2	3	4	5
NUMBER TESTED:			5	0	0	0	5
HINDLIMB EXTENSOR STRENGTH							
HINDLIMB RESISTANCE PRESENT			5	0	0	0	5
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE:	MEAN	568.4	0.0	0.0	0.0	533.4
		S.D.	85.55	0.00	0.00	0.00	295.50
	HIND:	MEAN	356.8	0.0	0.0	0.0	346.6
		S.D.	122.73	0.00	0.00	0.00	58.54
ROTAROD PERFORMANCE (seconds)	:	MEAN	102.5	0.0	0.0	0.0	72.5
		S.D.	39.04	0.00	0.00	0.00	44.72
HINDLIMB FOOTSPLAY (mm)	:	MEAN	80.0	0.0	0.0	0.0	63.4
		S.D.	15.73	0.00	0.00	0.00	13.69

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING FISHER'S EXACT TEST

NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 16
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS
MALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
CATALEPSY (seconds)	: MEAN	0.3	0.3	0.4	0.5	0.3
	S.D.	0.04	0.05	0.27	0.34	0.07
	N	5	5	5	5	5
BODY TEMPERATURE (degrees C)	: MEAN	38.6	38.7	38.5	38.9	38.3
	S.D.	0.35	0.58	0.47	0.27	0.65
	N	5	5	5	5	5
BODY WEIGHT (g)	: MEAN	214.1	208.5	211.6	209.1	217.7
	S.D.	17.34	17.82	12.29	4.84	10.82
	N	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

PHYSIOLOGICAL OBSERVATIONS
FEMALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
CATALEPSY (seconds)	: MEAN	0.3	0.3	0.3	0.3	0.3
	S.D.	0.05	0.05	0.04	0.05	0.05
	N	5	5	5	5	5
BODY TEMPERATURE (degrees C)	: MEAN	39.1	38.6	38.7	38.9	39.1
	S.D.	0.29	0.77	0.53	0.69	0.50
	N	5	5	5	5	5
BODY WEIGHT (g)	: MEAN	178.3	167.3	168.8	177.5	172.6
	S.D.	14.99	8.97	7.24	12.25	8.23
	N	5	5	5	5	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 17
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

WEEK 5

PHYSIOLOGICAL OBSERVATIONS
MALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
CATALEPSY (seconds)	: MEAN	0.2	0.0	0.0	0.0	0.4
	S.D.	0.04	0.00	0.00	0.00	0.28
	N	5	0	0	0	5
BODY TEMPERATURE (degrees C)	: MEAN	39.1	0.0	0.0	0.0	39.1
	S.D.	1.06	0.00	0.00	0.00	0.70
	N	5	0	0	0	5
BODY WEIGHT (g)	: MEAN	481.9	0.0	0.0	0.0	479.6
	S.D.	68.58	0.00	0.00	0.00	32.03
	N	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 17
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

WEEK 5

PHYSIOLOGICAL OBSERVATIONS
FEMALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
CATALEPSY (seconds)	: MEAN	0.3	0.0	0.0	0.0	0.3
	S.D.	0.05	0.00	0.00	0.00	0.13
	N	5	0	0	0	5
BODY TEMPERATURE (degrees C)	: MEAN	39.5	0.0	0.0	0.0	39.9+
	S.D.	0.24	0.00	0.00	0.00	0.19
	N	5	0	0	0	5
BODY WEIGHT (g)	: MEAN	273.6	0.0	0.0	0.0	270.6
	S.D.	24.40	0.00	0.00	0.00	14.44
	N	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
\+ = SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING DUNNETT'S TEST

UNAUDITED TABLE 18
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS
MALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
CATALEPSY (seconds)	: MEAN	0.2	0.0	0.0	0.0	0.4
	S.D.	0.04	0.00	0.00	0.00	0.28
	N	5	0	0	0	5
BODY TEMPERATURE (degrees C)	: MEAN	39.1	0.0	0.0	0.0	39.1
	S.D.	1.06	0.00	0.00	0.00	0.70
	N	5	0	0	0	5
BODY WEIGHT (g)	: MEAN	481.9	0.0	0.0	0.0	479.6
	S.D.	68.58	0.00	0.00	0.00	32.03
	N	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
NONE SIGNIFICANTLY DIFFERENT FROM THE CONTROLS USING DUNNETT'S TEST

UNAUDITED TABLE 18
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

WEEK 5

PHYSIOLOGICAL OBSERVATIONS
FEMALES

GROUP:		1	2	3	4	5
NUMBER TESTED:		5	0	0	0	5
CATALEPSY (seconds)	: MEAN	0.3	0.0	0.0	0.0	0.3
	S.D.	0.05	0.00	0.00	0.00	0.13
	N	5	0	0	0	5
BODY TEMPERATURE (degrees C)	: MEAN	39.5	0.0	0.0	0.0	39.9+
	S.D.	0.24	0.00	0.00	0.00	0.19
	N	5	0	0	0	5
BODY WEIGHT (g)	: MEAN	273.6	0.0	0.0	0.0	270.6
	S.D.	24.40	0.00	0.00	0.00	14.44
	N	5	0	0	0	5

1- 0 MG/KG/DAY 2- 125 MG/KG/DAY 3- 400 MG/KG/DAY 4- 1000 MG/KG/DAY 5- 2500 MG/KG/DAY
+ = SIGNIFICANTLY DIFFERENT FROM THE CONTROLS AT THE 0.05 LEVEL USING DUNNETT'S TEST

UNAUDITED TABLE 19

PROJECT NO.:WIL-140009 A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS

SPONSOR:GOODYEAR COMPANY GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: PRETEST

TOTAL ACTIVITY (COUNTS)

MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	496	240	215	197	1147
	SD	60.7	105.1	96.8	150.8	171.2
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	612	264	324	378	1578
	SD	183.0	108.0	196.2	157.5	559.5
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	445	303	282	377	1407
	SD	195.9	205.3	95.2	307.8	419.8
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	496	265	341	336	1438
	SD	199.3	211.5	284.2	277.6	701.2
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	451	222	204	267	1144
	SD	34.6	155.1	172.5	240.8	330.1
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 19
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: PRETEST

AMBULATORY ACTIVITY (COUNTS)
MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	288	162	137	110	697
	SD	54.3	78.1	50.3	81.9	77.2
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	300	154	172	188	815
	SD	88.4	69.2	116.0	91.5	293.6
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	266	183	162	236	847
	SD	115.6	140.5	57.1	185.8	277.4
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	280	144	174	125	722
	SD	92.7	120.4	141.7	124.6	292.3
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	233	120	115	161	629
	SD	45.4	89.5	97.8	144.9	185.5
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 19
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: PRETEST

TOTAL ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	745	369	291	351	1756
	SD	177.1	101.2	113.2	217.7	534.7
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	647	394	194	164	1399
	SD	177.5	53.0	97.6	240.4	269.1
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	623	315	369	310	1616
	SD	123.8	210.2	89.7	197.5	203.9
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	723	375	124	217	1439
	SD	105.9	269.0	148.3	265.5	594.0
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	667	317	288	144	1416
	SD	215.5	98.0	93.7	100.2	283.3
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 19
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: PRETEST

AMBULATORY ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	391	204	166	197	958
	SD	87.9	70.6	92.9	116.0	303.4
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	368	158	94	77	697
	SD	141.0	76.1	57.0	149.7	213.0
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	303	192	189	195	878
	SD	47.3	130.9	56.3	116.3	208.2
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	339	205	58	118	719
	SD	38.8	151.9	74.0	143.4	289.7
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	362	180	181	70	793
	SD	112.1	50.4	67.6	86.1	144.4
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

PROJECT NO.:WIL-140009
SPONSOR:GOODYEAR COMPANY

UNAUDITED TABLE 20
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 3

TOTAL ACTIVITY (COUNTS)
MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	445	179	177	191	991
	SD	96.4	112.2	121.2	132.8	304.5
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	474	342	160	180	1156
	SD	138.6	90.9	109.8	132.3	233.1
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	410	300	224	190	1124
	SD	149.8	181.3	157.0	170.8	547.5
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	386	184	155	446	1171
	SD	239.3	175.6	108.6	104.4	576.7
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	451	161	207	185	1004
	SD	230.0	90.5	121.8	104.9	476.3
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 20
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 3

AMBULATORY ACTIVITY (COUNTS)
MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	282	114	118	132	646
	SD	54.3	72.1	73.2	92.0	176.1
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	280	204	96	71	651
	SD	105.8	49.8	85.3	44.9	246.5
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	258	187	142	127	714
	SD	115.3	110.1	94.5	111.9	359.3
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	238	115	81	264	699
	SD	131.9	114.2	58.9	64.5	346.6
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	246	96	125	88	556
	SD	111.8	47.8	66.0	62.0	249.5
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 20
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 3

TOTAL ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	739	411	296	319	1765
	SD	129.2	45.6	98.1	222.2	291.2
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	619	293	218	355	1485
	SD	92.2	132.9	152.6	122.2	382.9
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	687	489	308	266	1750
	SD	189.2	176.1	142.5	150.7	518.8
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	803	508	210	243	1763
	SD	117.2	99.4	144.4	284.6	344.2
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	586	316	120	206	1228
	SD	283.5	101.0	150.9	184.8	607.6
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 20
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 3

AMBULATORY ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	421	275	169	186	1052
	SD	77.2	67.5	45.9	123.4	207.1
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	375	178	154	223	930
	SD	51.7	66.4	104.9	88.5	241.0
	N	5	5	5	5	5
400 MG/KG/DAY	MEAN	407	294	211	166	1078
	SD	113.6	116.7	89.7	116.4	368.3
	N	5	5	5	5	5
1000 MG/KG/DAY	MEAN	448	311	132	151	1042
	SD	42.2	40.9	89.4	154.1	144.6
	N	5	5	5	5	5
2500 MG/KG/DAY	MEAN	371	201	69	139	780
	SD	185.0	70.8	84.7	141.4	429.7
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

PROJECT NO.:WIL-140009
SPONSOR:GOODYEAR COMPANY

UNAUDITED TABLE 21
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 5

TOTAL ACTIVITY (COUNTS)
MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	542	295	358	277	1471
	SD	76.5	182.2	111.0	152.6	372.5
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
400 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
1000 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
2500 MG/KG/DAY	MEAN	420	180	244	261	1105
	SD	85.1	65.3	162.5	162.7	157.0
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 21
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 5

AMBULATORY ACTIVITY (COUNTS)
MALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	358	209	225	171	963
	SD	29.6	127.4	71.1	88.6	226.4
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
400 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
1000 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
2500 MG/KG/DAY	MEAN	246	118	157	169	689
	SD	44.8	47.0	111.8	101.3	158.1
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

UNAUDITED TABLE 21
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 5

TOTAL ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	815	464	420	264	1962
	SD	136.9	118.1	150.8	140.5	326.8
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
400 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
1000 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
2500 MG/KG/DAY	MEAN	715	399	272	174	1561
	SD	141.4	238.2	171.5	165.6	613.9
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.

PROJECT NO.:WIL-140009
SPONSOR:GOODYEAR COMPANY

UNAUDITED TABLE 21
A 28-DAY ORAL (GAVAGE) TOXICITY STUDY OF WINGSTAY K RATS
GROUP MEAN MOTOR ACTIVITY COUNTS

STUDY INTERVAL: WEEK 5

AMBULATORY ACTIVITY (COUNTS)
FEMALE

GROUP		SUBSESSION 1	2	3	4	TOTAL
0 MG/KG/DAY	MEAN	493	292	291	182	1258
	SD	114.7	91.4	76.5	91.2	185.4
	N	5	5	5	5	5
125 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
400 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
1000 MG/KG/DAY	MEAN	0	0	0	0	0
	SD	0.0	0.0	0.0	0.0	0.0
	N	0	0	0	0	0
2500 MG/KG/DAY	MEAN	453	246	180	123	1002
	SD	105.8	129.0	106.4	133.7	425.8
	N	5	5	5	5	5

SUBSESSION LENGTH: 10 MIN. SESSION LENGTH: 40 MIN.