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Pub. Journal Name 9

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Author(s) 10

Organ. Name 11

Dept/Div 12

P.O. Box 13 | Street No./Name 14

City 15 | State 16 | Zip 17 | Country 18

MID No. (7) 19 | D & B NO. (11) 20

Contractor 21

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Doc Title 23

Chemical Name (300 per name) 25 | CAS No. 26

90-95140142

during the comment period in determining whether to issue the emergency exemptions requested by the above-named state lead agricultural agencies.

A record has been established for this notice under docket number "OPP-180973" (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The public record is located in Room 1132 of the Public Response and Program Resources Branch, Field Operations Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA.

Electronic comments can be sent directly to EPA at:

opp-docket@epamail.epa.gov

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

The official record for this notice, as well as the public version, as described above will be kept in paper form. Accordingly, EPA will transfer all comments received electronically into printed, paper form as they are received and will place the paper copies in the official record which will also include all comments submitted directly in writing. The official record is the paper record maintained at the address in "ADDRESSES" at the beginning of this document.

List of Subjects

Environmental protection, Pesticides and pests, Crisis exemptions.

Dated: June 5, 1995.

Stephen L. Johnson,

Director, [illegible] Division Office of Pesticide Programs.

[FR Doc. [illegible] Filed 6-20-95; 8:45 am]

BILLING CODE [illegible]

[OPPTS-44616; FRL-4931-3]

TSCA Chemical Testing; Receipt of Test Data

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces the receipt of test data on 1,3,5-trimethylbenzene (CAS No. 108-67-8), submitted pursuant to a final test rule under the Toxic Substances Control Act (TSCA). Publication of this notice is in compliance with section 4(d) of TSCA.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Environmental Protection Agency, Rm. E-543B, 401 M St., SW., Washington, DC 20460, (202) 554-1404, TDD (202) 554-0551; e-mail: TSCA-Hotline@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: Section 4(d) of TSCA requires EPA to publish a notice in the Federal Register reporting the receipt of test data submitted pursuant to test rules promulgated under section 4(a) within 15 days after it is received.

I. Test Data Submissions

Test data for 1,3,5-trimethylbenzene were submitted by Koch Industries, Inc. pursuant to a test rule at 40 CFR 799.5075. They were received by EPA on May, 11, 1995. The submission includes a final report for a 90-Day Oral Gavage Toxicity Study of 1,3,5-trimethylbenzene in Rats with a Recovery Group. This chemical is used as an intermediate in the production of an antioxidant for plastics.

EPA has initiated its review and evaluation process for this data submission. At this time, the Agency is unable to provide any determination as to the completeness of the submission.

II. Public Record

EPA has established a public record for this TSCA section 4(d) receipt of data notice (docket number OPPTS-44616). This record includes copies of all studies reported in this notice. The record is available for inspection from 12 noon to 4 p.m., Monday through Friday, except legal holidays, in the TSCA Public Docket Office, Rm. B-607 Northeast Mall, 401 M St., SW., Washington, DC 20460.

Authority: 15 U.S.C. 2603.

List of Subjects

Environmental protection, Test data.

Dated: June 8, 1995.

Charles M. Auer,

Director, Chemical Control Division, Office of Pollution Prevention and Toxics.

[FR Doc. 95-15167 Filed 6-20-95; 8:45 am]

BILLING CODE 6560-50-F

FEDERAL EMERGENCY MANAGEMENT AGENCY

[FEMA-1054-DR]

Missouri; Amendment to Notice of a Major Disaster Declaration

AGENCY: Federal Emergency Management Agency (FEMA).

ACTION: Notice.

SUMMARY: This notice amends the notice of a major disaster for the State of Missouri, (FEMA-1054-DR), dated June 2, 1995, and related determinations.

EFFECTIVE DATE: June 12, 1995.

FOR FURTHER INFORMATION CONTACT: Pauline C. Campbell, Response and Recovery Directorate, Federal Emergency Management Agency, Washington, DC 20472, (202) 646-3606.

SUPPLEMENTARY INFORMATION: The notice of a major disaster for the State of Missouri dated June 2, 1995, is hereby amended to include Individual Assistance in the following areas among those areas determined to have been adversely affected by the catastrophe declared a major disaster by the President in his declaration of June 2, 1995:

The counties of Benton, Boone, Cole, Gasconade, Franklin, Jefferson, Johnson, Miller, St. Charles, St. Clair, Ste. Genevieve, and St. Louis for Individual Assistance. (already designated for Public Assistance.)

The counties of Callaway, Cape Girardeau, Carroll, Clark, Lincoln, Mississippi, Montgomery, Osage, Ray, Scotland, Scott, Vernon, and the City of St. Louis for Individual Assistance.

(Catalog of Federal Domestic Assistance No. 83.516, Disaster Assistance)

Craig Wingo,

Division Director, Infrastructure Support Division of Response and Recovery Directorate.

[FR Doc. 95-15363 Filed 6-20-95; 8:45 am]

BILLING CODE [illegible]

[FEMA-1057-DR]

Tennessee; Major Disaster and Related Determinations

AGENCY: Federal Emergency Management Agency (FEMA).

ACTION: Notice.

SUMMARY: This is a notice of the Presidential declaration of a major disaster for the State of Tennessee (FEMA-1057-DR), dated June 14, 1995 and related determinations.

EFFECTIVE DATE: June 14, 1995.

FOR FURTHER INFORMATION CONTACT: Pauline C. Campbell, Response and Recovery Directorate, Federal Emergency Management Agency, Washington, DC 20472, (202) 646-

KOCH INDUSTRIES INC

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194PP

June 13, 1995

Mr. Anthony Cheatham
OPPT Document Control Office
Environmental Protection Agency
401 M Street S. W. Washington, DC 20460
Mail Code 7407

Subject: TSCA Section 4 Test Rule on 1,3,5-Trimethylbenzene,
(Federal Register Vol. 58, No. 216, November 10, 1993)
Public Docket # OPPTS-42111C

Dear Mr. Cheatham:

The ~~three~~ 46 copies of the final study, 90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group are enclosed.

Respectfully submitted,

Carol W. Komin
Corporate TSCA Coordinator

enclosures

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P.O. Box 2256 ▪ Wichita, Kansas 67201 ▪ 316/832-5500

40950000081

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

FINAL REPORT

IITRI Project No. L08512
Study No. 2

Testing Facility:

IIT Research Institute
Life Sciences Department
10 West 35th Street
Chicago, IL 60616

Sponsor:

Koch Industries, Inc.
P.O. Box 2256
Wichita, KS 67201

May 1995

IITRI
since 1936

COMMITMENT TO EXCELLENCE

2

90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

Study Initiation Date: August 30, 1994
Experimental initiation Date: August 30, 1994
Experimental Termination Date: December 27, 1994

FOREWORD

This report describes a 90-day oral gavage toxicity study conducted by IIT Research Institute (IITRI) for Koch Industries, Inc.. The Sponsor Representative for the study was Carol Komin, B.S..

William Johnson, Ph.D., D.A.B.T., Senior Toxicologist, served as Study Director and was responsible for the overall conduct of the study. Mary Harrington, B.S., Assistant Toxicologist, served as study supervisor, responsible for data collection. J. Brooks Harder, D.V.M., IITRI staff veterinarian, was responsible for animal care. Scott Garthwaite, B.S., was responsible for the analytical chemistry aspects of the study. Mary Ann Cahill, B.S., M.T. (A.S.C.P.) performed the clinical pathology evaluations. Dr. Gretchen Schmidt, D.V.M., D.A.C.V.O., Consultant, performed the ophthalmological evaluations. Robert Morrissey, D.V.M., Ph.D., D.A.C.V.P., of Pathology Associates Inc., Frederick, MD, served as the study pathologist. Ronald A. Boyne, B.S., Manager, Quality Assurance, was responsible for the quality assurance program.

This report was prepared by J. Fred Krueger, M.S., Senior Technical Editor.

5/9/95

David L. McCormick, Ph.D., D.A.B.T. Date
Manager, Toxicology and
Carcinogenesis
Life Sciences Department

William D. Johnson 5-9-95

William D. Johnson, Ph.D., D.A.B.T. Date
Study Director
Life Sciences Department

90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

GLP COMPLIANCE STATEMENT

This study was conducted in accordance with U.S. Environmental Protection Agency (EPA) Good Laboratory Practice (GLP) Standards as set forth in the Code of Federal Regulations (40 CFR Part 792; TSCA), except for the following protocol deviations: 1) stability of the corn oil vehicle was provided by the supplier and was not determined by analysis of peroxide content by IITRI as indicated in the protocol; 2) tissues from a mid dose male animal which died as a result of a gavage error on Day 30 of the study were not processed and examined microscopically; 3) on three separate occasions during the study, mortality checks were only done once daily on weekdays (protocol specified twice daily on weekdays) and on three separate occasions mortality checks were done twice daily on weekends (protocol specified once daily on weekends). The raw data have been reviewed by the Study Director, who certifies that the information contained in this report accurately reflects and is supported by the study raw data.

William D. Johnson 5-9-95

William D. Johnson, Ph.D., D.A.B.T. Date
Study Director
Life Sciences Department

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

SUMMARY

1,3,5-Trimethylbenzene (aka: Mesitylene, 99%) was administered in a corn oil vehicle at dose levels of 0 (Vehicle Control), 50, 200 and 600 mg/kg/day to 10 male and 10 female Sprague Dawley CD rats. Graded concentrations of the test substance or vehicle were administered by oral gavage at a constant volume of 5 ml/kg/day 5 days per week for at least 90 days. An additional 10 rats/sex in the high dose (*i.e.*, 600 mg/kg/day) group were dosed on the same dosing schedule as the test substance treated groups but were subsequently retained without treatment for an additional 28 days to evaluate recovery from any toxic effects. Body weights, body weight gain and food consumption were determined weekly during the study. All rats received an ophthalmological examination prior to and during the last week of the 90-day dosing period. The rats were observed daily for adverse clinical signs and hematology and serum chemistry parameters were evaluated after 30 days, at the termination of treatment and at the end of the recovery period. All rats were subjected to complete necropsy. Select organs were weighed at necropsy. All tissues from the vehicle control and high dose (non-recovery) animals were processed and examined microscopically. Tissues from the low and mid dose group (non-recovery) animals that were examined microscopically included the lungs and any gross lesions observed at necropsy. No tissues from the recovery animals were examined microscopically.

No test substance-related deaths occurred during the study. Clinical signs observed predominantly in the high dose animals consisted of discolored inguinal fur, wet inguinal fur and salivation. No statistically significant effects on body weight, body weight gain (except for a significant decrease in high dose males after 5 weeks of treatment) or food consumption were observed; however, cumulative body weight gain was decreased approximately 11% in the high dose males. No treatment-related ophthalmic lesions were observed following the 90-day treatment period. Treatment-related changes in clinical chemistry parameters at the end of the 90-day dosing period consisted of increased phosphorus levels in high dose males and females. Absolute liver weight was significantly increased in high dose females and relative liver weights were significantly increased in high dose males and females at treatment termination. Relative kidney weight was also increased in high dose males at treatment termination. No treatment-related microscopic lesions were observed in the liver or kidneys of the high dose animals, or in any other tissue or organ of any animal. All treatment-related effects (*i.e.* wet/discolored inguinal fur, salivation, decreased body weight gain, increased phosphorus levels, increased liver and kidney weights) appeared to be reversible, since these effects were no longer apparent in the recovery animals at the end of the 28-day recovery period.

The observed increases in phosphorus levels and liver and kidney weight in the 600 mg/kg/day dose group established 200 mg/kg as the no-observed-effect level (NOEL) in this study.

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

I. INTRODUCTION

The purpose of this study was to evaluate the potential toxicity of 1,3,5-Trimethylbenzene (aka: Mesitylene, 99%) in Sprague Dawley CD rats following once daily oral gavage administration in a corn oil vehicle for 5 days per week over a period of at least 90 days. Rats from the high dose group were retained untreated for an additional 28 days to evaluate recovery from any toxic effects. This study was performed in response to a TSCA Section 4 test rule for 1,3,5-Trimethylbenzene and was conducted according to EPA TSCA testing guideline 40 CFR 798.2650 as modified by 40 CFR 799.5075 (FR, Vol. 58, No. 216, pp. 59681-82) and its GLP requirements at 40 CFR Part 792. The dose levels used in this study were selected by the Sponsor.

II. MATERIALS AND METHODS

Table 1 lists abbreviations used in this report and their definitions. The study protocol and any protocol amendments and/or deviations are included as Appendix 1.

A. Test Substance and Dosing Formulations: 1,3,5-Trimethylbenzene (aka: Mesitylene, 99%; CAS No. 108-67-8), Lot No. 4388-01, was received on March 28, 1994. The test substance was a clear, colorless liquid and was stored in the original containers at room temperature. Analyses of the bulk test substance for identity, composition, purity and stability (relative to laboratory storage conditions) were performed by IITRI. The corn oil vehicle used in the study was obtained from Best Foods, Union, NJ (Lot No. 66580) and was stored at room temperature in the original containers. Documentation pertaining to the characterization of the corn oil was provided by the supplier. Characterization data provided by the supplier indicated that the corn oil was stable for one year when stored at room temperature out of direct sunlight. Reserve samples of the test and vehicle control substances were retained by the Sponsor.

Stock dosing solutions of test substance in corn oil were prepared weekly during the study. The stock solutions were stored at room temperature and dosing aliquots were dispensed daily.

All animals were dosed at a constant dosing volume of 5 ml/kg of body weight. Therefore, solutions at concentrations of 10, 40 and 120 mg/ml were prepared to dose the 50, 200 and 600 mg/kg/day dose groups, respectively. Each dosing solution was prepared individually (*i.e.*, a suitable aliquot of test substance was weighed out and diluted to volume with corn oil for each dosing solution). A volume of corn oil was also dispensed at the time of dosing solution preparation, was stored similarly (*i.e.*, at room temperature) and was used to dose the vehicle control group. Dosing formulations prepared for the first two weeks of dosing were analyzed for homogeneity and concentration at all dose levels. The low and high dose formulations prepared for the following three weeks of dosing were analyzed to confirm their concentration,

followed by biweekly concentration analysis of the low and high dose formulations for the remainder of the 13-week dosing period. Stability analyses were performed on low and high concentration solutions prepared for the first week of dosing. Stability was determined at 24 hours, 1 and 2 weeks after formulation. The analytical methods used and the results of the analyses are presented in Appendix 2.

B. Animals, Housing and Diet: Sixty male and 60 female Sprague Dawley CD (Crl:CD® BR) rats, approximately 6 weeks of age, were purchased from Charles River Laboratories, Portage, MI for use in this study. The rats were received August 17, 1994 and a random sample of ten of each sex weighed 133 to 158 g the next day. Upon arrival, the rats were held in quarantine for approximately 2 weeks and examined to ensure their health and suitability as test subjects. The rats were individually housed in stainless steel wire mesh cages measuring 24.0 x 17.8 x 17.6 cm during the quarantine, dosing and recovery periods. The cages were suspended over excrement pans fitted with absorbent cage boards or papers which were changed twice weekly. Each rat was identified by means of a permanent metal tag inserted through the pinna of the right ear, bearing a number unique within the animal room. A card containing the study number, test substance information, animal number, sex and group/dose level was also attached to each cage.

The air conditioned animal room temperature and relative humidity ranged from 19.0 to 23.0°C and 21 to 79%, respectively, during the treatment and recovery phases of the study. Fluorescent lighting was provided for 12 hours followed by 12 hours of darkness.

Purina Certified Rodent Chow 5002 (PMI Feeds, Inc., St. Louis, MO) and reverse osmosis (R.O.)-purified water, supplied by means of an automatic watering system, were provided *ad libitum* except for approximately 16-20 hours (no food) prior to the scheduled blood collection or necropsy. Based on analysis reports for the diet provided by the vendor and City of Chicago water analysis reports, as well as IITRI water analytical records, no contaminants were known to be present in the food or water at levels expected to interfere with the outcome of the study.

C. Experimental Design: Four groups of rats (*i.e.*, 10/sex in Groups 1, 2 and 3, and 20/sex in Group 4; 100 total) were randomly selected from the pool of suitable test candidates using an in-house developed computerized randomization program constrained by body weight. Groups 2, 3 and 4 were administered graded doses of test substance (*i.e.*, 50, 200 and 600 mg/kg of body weight/day, respectively) in corn oil at a dosing volume (constant for all rats) of 5 ml/kg of body weight by oral gavage. The fourth group (Group 1: Vehicle Control) was administered corn oil only at a dosing volume equivalent to that of the test substance dose groups (*i.e.*, 5 ml/kg of body weight). Rats were dosed once daily, 5 days per week for a period of 90-91 days for a total of 65-66 doses. All surviving rats, except recovery rats, were sacrificed and necropsied approximately 24 hours after the administration of the last dose. To facilitate necropsy scheduling over a two day period, half of the males and half of the females in each of

Groups 1, 2, 3 and 4 (90-day core rats) received one additional dose for one additional day (*i.e.* 66 doses). Recovery rats [10 males and 10 females in the high dose (600 mg/kg/day) group] were necropsied 29 days later. The study groups were as follows:

Group	1,3,5-Trimethylbenzene Dose (mg/kg/day)	Number of Rats (M + F)
1	0 (Vehicle Control)	10 + 10
2	50	10 + 10
3	200	10 + 10
4	600	20 + 20

Treatment was initiated on August 30, 1994 and the final doses were administered on November 28, 1994 (half of males and females in each dose group and all rats in the recovery group) and November 29, 1994 (half of the males and females in each core group). Core (*i.e.*, non-recovery) rats were necropsied on November 29 and November 30, 1994, 24 hours, respectively, after the final dose. All recovery rats were necropsied on December 27, 1994.

D. Methods:

1. Test Substance Administration: The test substance/corn oil solutions and vehicle control (corn oil) were administered once daily, 5 days/week by oral gavage using disposable plastic syringes equipped with ball-tipped, stainless steel intubation needles. All dosing solutions and the vehicle control were administered at a constant dosing volume of 5 ml/kg of body weight.

2. Mortality/Morbidity Observations: Rats were observed once daily for morbidity and mortality during the approximately 2-week quarantine period. Following initiation of dosing, all rats were observed twice daily on weekdays (except only once daily on study days 10, 37 and 66) and once daily on weekends and holidays (except twice daily on study days 33, 47 and 61).

3. Physical Examinations and Clinical Observations: Physical examinations and observations for clinical symptoms were performed on each animal once prior to treatment initiation to ensure suitability for use as a test animal. During the treatment and recovery phases of the study, all animals were observed (cage-side) for adverse clinical reactions at the time of the survival check and any adverse reactions observed were recorded at that time. Thorough hand-held clinical observations were performed and recorded weekly using computerized electronic data capture (Labcat, IPA Inc., Princeton, NJ, version 4.64).

4. Ophthalmological Examinations: Prior to dose initiation (August 23, 1994), both eyes of all quarantine animals were examined by a board-certified veterinary ophthalmologist using an indirect ophthalmoscope following mydriasis with tropicamide. Ocular structures

examined included the cornea, conjunctiva, anterior chamber, iris, lens, anterior vitreous, retina, retinal blood vessels and optic nerve. Both eyes of all animals were again examined during the last week of dosing (November 23, 1994). The absence of significant ophthalmic lesions during the final week of the dosing period obviated the examination of the eyes of the recovery rats 28 days later.

5. Body Weights: Body weights were measured upon receipt of the animals (10 animals/sex), at randomization, immediately prior to the first dose, weekly thereafter, including the recovery period, and at scheduled termination immediately prior to sacrifice (fasted weight). Dose volumes were calculated on the basis of the most recently determined body weights. The fasted terminal body weights were used to calculate organ-to-body weight ratios. Body weights were recorded and body weight gains were calculated using electronic data capture.

6. Food Consumption: Individual food consumption of all rats was measured weekly during the treatment and recovery phases of the study using computerized electronic data capture.

7. Clinical Laboratory Procedures: Thirty days following initiation of dosing blood was collected via retro-orbital sinus puncture of the left eye of all animals, which had been fasted overnight and which had been anesthetized via inhalation of 70% CO_2/30% O_2. To facilitate collection, samples were taken from half of the males and females on September 29 and 30, 1994, respectively. On their scheduled day of sacrifice and necropsy, including recovery rats, all fasted rats were anesthetized using sodium pentobarbital. Blood samples were collected from each anesthetized rat via the abdominal aorta for clinical pathology evaluation. The following clinical pathology parameters were examined at all time points: glucose (GLU), gamma glutamyl transpeptidase (GGT), alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALK P), creatine kinase (CK), urea nitrogen (BUN), creatinine (CREA), sodium (Na), potassium (K), calcium (Ca), chloride (Cl), phosphorus (PHOS), total protein (T PRO), albumin (ALB), total bilirubin (TBIL) and cholesterol (CHOL). Hematological parameters measured consisted of total erythrocyte count (RBC), hemoglobin (HGB), mean corpuscular volume (MCV), total white blood cell count (WBC), differential white blood cell count and platelet count (PLT). The following values were calculated from the data: globulin (GLOB), albumin/globulin ratio (A/G Ratio), hematocrit (HCT), mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC). Hematology data were analyzed using Labcat (version 4.3).

8. Postmortem Examination Procedures: On the scheduled day of necropsy, fasted rats were anesthetized with sodium pentobarbital and complete necropsies were performed on all rats. The following tissues were collected and fixed in 10% neutral buffered formalin:

adrenals, brain, eyes, exorbital lacrimal glands, esophagus, gonads, heart, duodenum, jejunum, ileum, cecum, colon, rectum, kidneys, liver, lungs, mesenteric lymph nodes, pancreas, aorta, pituitary, prostate, epididymides and seminal vesicles, salivary glands, sciatic nerve, skeletal muscle, skin (with mammary gland), spinal cord (cervical, mid-thoracic and lumbar), spleen, sternum (bone and marrow), stomach, thymus, thyroid (with parathyroids), trachea, urinary bladder, uterus, Zymbal glands, nasal turbinates, femur, gross lesions and ear with attached tag. The adrenal glands, brain, gonads, kidneys, liver and lungs of all rats were weighed at necropsy and the organ weights relative to body weights (fasted) were calculated.

The complete set of collected tissues (except skin and mammary gland, ear, skeletal muscle, femur, spinal cord, eyes, exorbital lacrimal glands, Zymbal glands, epididymides, prostate and seminal vesicles) from all vehicle control and 600 mg/kg/day dose group animals sacrificed at the end of the 90-day dosing period was processed and examined by light microscopy by a board-certified veterinary pathologist. In addition, the lungs from the 50 and 200 mg/kg/day dose group animals were also processed and examined microscopically, along with gross lesions observed in all animals. The remaining tissues from the 50 and 200 mg/kg/day dose group animals were collected, but were not processed and examined microscopically. After the 28-day recovery period, a complete set of tissues was collected from all of the recovery 600 mg/kg/day animals; however, no tissues from any of these animals were examined microscopically.

E. Statistical Procedures: Data collected electronically using Labcat (*i.e.*, body weights, body weight gains, food consumption, hematology) were analyzed using the statistical capabilities provided by the software, which consisted of analysis of variance (ANOVA) followed by Dunnett's multiple range comparison test. Other data (*i.e.*, clinical chemistry, absolute and relative organ weights) were analyzed by ANOVA followed by Dunnett's multiple-range comparison using SYSTAT software (SYSTAT, SPSS, Inc, Chicago, IL, version 5.0). Analyses were performed on the two sexes independently. Analyses consisted of comparing the treated groups with the vehicle control at the 30-day interim and dose termination time points. Since no vehicle control animals were retained for recovery observation, statistical comparison of recovery animal parameters could not be performed. A minimum significance level of $p \leq 0.05$ was used in all comparisons.

F. Archives: All raw data generated at IITRI, tissue specimens, slides and a copy of the final report are retained in the IITRI archives.

III. RESULTS

A. Test Substance Analyses: The results of the analyses of the bulk test substance for identity, purity, composition and stability and of the test substance/corn oil dosing solutions for

concentration, homogeneity and stability are presented in Appendix 2. The test substance was confirmed as 1,3,5-trimethylbenzene with a purity of 99.2%. Psuedocumene was found to be present at 0.7%. Similar purity and composition percentages were found upon completion of the treatment phase of the study, indicating the test substance was stable during the period of its use. Low and high concentration solutions stored at room temperature were stable for at least 14 days. All preparations were found to be homogeneous. Overall mean analyzed concentrations were 98.9% of the target concentration for the 10 mg/ml dosing solution, 96.9% for the 40 mg/ml dosing solution and 100.8% for the 120 mg/ml dosing solution. All individual sample concentrations were within 10% of the target concentrations. No test substance was detected in any vehicle control sample.

B. Mortality/Morbidity: Individual animal fates are given in Appendix 4. No test substance related deaths occurred during the study. Two deaths due to dosing error occurred: animal #71 (female; Group 4, high dose) during the initial week of dosing (replaced by animal #779) and animal #41 (male; Group 3, mid dose) on Day 30 of the study.

C. Ophthalmology: A summary ophthalmology report is presented in Appendix 3. At the terminal examination, one female each in the 50 mg/kg/day dose group (animal number 32) and in the 200 mg/kg/day dose group (animal number 59) exhibited cataracts in the left eye, which were not considered treatment-related. No other ophthalmic lesions were observed in any animal at the dose termination examination. The absence of lesions at that time obviated the examination of the recovery animals for ophthalmic lesions.

D. Clinical Observations: Clinical observations are summarized in Tables 2 and 3. Individual animal observations are presented in Appendix 4. Redness around the nose fur was observed in all dose groups and in the vehicle control group; however, the greatest incidences occurred in the high dose (600 mg/kg/day) group (10 males and 5 females). With the exception of one low dose (50 mg/kg/day) male, discolored inguinal fur was seen only in the high dose group (18 males and 13 females). Similarly, except for one mid dose (200 mg/kg/day) female, salivation and wet inguinal fur were seen only in the high dose animals. None of the above clinical observations were seen in any of the recovery animals at the end of the recovery period. Other clinical signs were observed at low incidences in one or more groups and were considered spontaneous in occurrence and unrelated to administration of the test substance.

E. Body Weights: Mean weekly body weights are summarized in Tables 4 and 5 and data for the individual animals are presented in Appendices 5 and 6. Mean weekly and cumulative body weight gains are summarized in Tables 6 and 7 and individual data are presented in Appendices 7 and 8. No statistically significant effects on mean body weight were observed in any of the treated groups compared to the vehicle control group during the treatment period of the study. Mean body weight gains were significantly decreased in the 600 mg/kg/day

males compared to the vehicle control group at the end of the fifth week of treatment. Although overall cumulative body weight gains for the duration of the treatment period were not significantly affected in the treated rats (either sex) compared to the vehicle controls, body weight gain in the high dose (600 mg/kg/day) males was decreased approximately 11% when compared to that of the vehicle controls. Cumulative body weight gain in the recovery animals at the end of the 28-day recovery period was similar to that of the vehicle control animals at the end of the treatment period.

F. Food Consumption: Mean weekly food consumption data are summarized in Tables 8 and 9 and individual animal food consumption data are presented in Appendices 9 and 10. No statistically significant effects on mean food consumption were observed in any of the treated groups compared to the vehicle control group during the treatment period of the study.

G. Clinical Chemistry: Mean clinical chemistry data at the 30-day interim, post-dosing and recovery time points are summarized in Tables 10 through 13 and individual animal data are presented in Appendices 11 and 12. At the 30-day time point, statistically significantly affected parameters in treated animals compared to vehicle controls consisted of: increased albumin (ALB) and albumin/globulin (A/G) ratio, and decreased globulin (GLOB) and cholesterol (CHOL) in high dose (600 mg/kg/day) males; decreased cholesterol (CHOL) in mid dose (200 mg/kg/day) males; and decreased blood urea nitrogen (BUN) in high dose (600 mg/kg/day) females. At the termination of dosing, significantly affected parameters occurred only in the high dose group and consisted of: increased alkaline phosphatase (ALK P) and phosphorus (PHOS), and decreased glucose (GLU) in high dose male rats; and increased cholesterol (CHOL) and phosphorus (PHOS), and decreased sodium (Na) and chloride (Cl) in high dose female rats. None of the statistically significant differences present at the 30-day time period were considered to be related to administration of the test article, since corresponding changes were not observed for any of these same parameters at the termination of dosing. Significant differences in clinical chemistry parameters present after the 90-day dosing period, with the exception of phosphorus, were also not considered treatment-related because the values were within or approximately within the range of in-house historical control values for rats of the strain and age used in this study (glucose, range = 97.4-155.7 mg/dl, N = 20; chloride, range = 105-111 meq/l, N = 20; sodium, range = 141-148 meq/l, N = 20; cholesterol, range = 32-112 mg/dl, N = 20), or because the increase was considered to be due to exceptionally high values for two individual animals in the group (*i.e.*, alkaline phosphatase values of 257 and 213 IU/l for animals 61 and 63, respectively). The increased phosphorus levels seen in both high dose (600 mg/kg/day) males and females were considered treatment-related; however, phosphorus levels in the recovery animals were lower than those seen in the high dose (and control) animals at the end of the 90-day dosing period.

H. Hematology: Mean hematology data for the 30-day interim, post-dosing and post-recovery time points are summarized in Tables 14 through 17 and individual animal data are presented in Appendices 13 and 14. Mean absolute differential white blood cell counts are summarized in Tables 18 though 21 and individual data are presented in Appendices 15 and 16. No statistically significant effects on mean hematological parameters were observed in any group. Mean monocyte counts (MONO) were significantly increased in male rats in the 200 mg/kg/day and 600 mg/kg/day dose groups compared to vehicle control males at the termination of the dosing period; however, the increases were not considered treatment-related. No other significant effects on absolute differential white blood cell counts were observed.

I. Organ Weights: Mean absolute and relative organ weight data are summarized in Tables 22 through 25 and individual animal data are presented in Appendices 17 and 18. Mean absolute liver weight was significantly increased in the 600 mg/kg/day females compared to vehicle controls. There were no significant differences between the treated and control groups with regard to terminal fasted body weight. Mean relative kidney weight was significantly increased in 600 mg/kg/day males and mean relative liver weight was significantly increased in 600 mg/kg/day males and females compared to vehicle controls. Both the relative kidney weight in male and the relative liver weight in male and female recovery animals were decreased from those of the high dose animals at the end of the 90-day dosing period.

J. Gross Pathology: Incidences of gross necropsy observations are summarized in Table 26. No treatment related gross lesions were observed in any animals. Several gross lesions were noted at necropsy; however, no lesion occurred in more than one animal per sex in any one group.

K. Histopathology: A complete histopathology report is presented in Appendix 19. No treatment-related changes were observed in any tissue or organ of any animal.

IV. DISCUSSION AND CONCLUSIONS

Repeated administration of 1,3,5-Trimethylbenzene to Sprague Dawley CD rats for 5-day weekly doses over a period of at least 90 days at dose levels of 50, 200 and 600 mg/kg/day did not result in any test substance-related deaths. Predominant clinical signs observed primarily in the high dose group consisted of discolored inguinal fur, wet inguinal fur and salivation. Although no statistically significant effects on body weight, body weight gain (except for a significant decrease in high dose males after 5 weeks of treatment) or food consumption were observed, overall body weight gain during the 90-day treatment period in the high dose (600 mg/kg/day) males was decreased approximately 11% from that of the vehicle control males. Treatment-related changes in clinical chemistry parameters at the termination of the dosing period consisted of increased phosphorus levels in high dose males and females. No changes in hematological parameters were observed. Mean relative liver and kidney weights were increased in high dose male rats and mean absolute and relative liver weights were increased high dose female rats compared to vehicle controls. The

increased liver weights most likely resulted from the induction of microsomal enzyme pathways in an attempt to metabolize the test substance. All treatment-related effects (*i.e.* wet/discolored inguinal fur, salivation, decreased body weight gain, increased phosphorous levels, increased liver and kidney weights) appeared to be reversible, since these effects were no longer apparent in the recovery animals at the end of the 28-day recovery period. No treatment-related histopathological changes were observed in the liver or kidneys of the high dose animals, or any other tissue or organ of any animal.

In conclusion, the observed increases in phosphorus levels and liver and kidney weight in the 600 mg/kg/day dose group established 200 mg/kg as the no-observed-effect level (NOEL).

V. QUALITY ASSURANCE STATEMENT

Study Title:	90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group
Project Number	L08512
Study Number:	2
Study Director:	William D. Johnson, Ph.D., D.A.B.T.

This study has been subjected to inspections and the report has been audited by the IITRI Quality Assurance Unit in accordance with U.S. Environmental Protection Agency (EPA; TSCA) "Good Laboratory Practice (GLP) Standards" - "CFR Title 40 Section 792.35". The report describes the methods and procedures used in the study and the reported results accurately reflect the raw data of the study.

The following are the inspection dates, and the dates inspection findings were reported:

	Inspection Findings Reported to:	
Dates of Inspections	Study Director	Management
August 29, 1994	August 29, 1994	August 29, 1994
August 30, 1994	August 30, 1994	August 30, 1994
August 31, 1994	August 31, 1994	August 31, 1994
September 12, 1994	September 12, 1994	September 12, 1994
September 13, 1994	September 13, 1994	September 13, 1994
September 29, 1994	September 29, 1994	September 29, 1994
October 17, 1994	October 17, 1994	October 17, 1994
October 26, 1994	October 26, 1994	October 26, 1994
November 9, 1994	November 9, 1994	November 9, 1994
November 29, 1994	November 29, 1994	November 29, 1994
December 19, 1994	December 19, 1994	December 19, 1994
March 6-9, 14-16, 20-22, 23-24, 26-28, 1995	March 29, 1995	March 29, 1995
May 4,5 and 8, 1995	May 8, 1995	May 8, 1995

R. A. Boyne 5-8-95

Ronald A. Boyne, B.S. Date
Manager, Quality Assurance Unit

VI. TABLES

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 1

ABBREVIATIONS

ADR	-	adrenal glands
ALB	-	albumin (grams / deciliter serum)
A/G Ratio	-	albumin / globulin ratio
ALK P	-	alkaline phosphatase (international units / liter serum)
ALT	-	alanine aminotransferase (international units / liter serum)
AST	-	aspartate aminotransferase (international units / liter serum)
BASO	-	basophils (thousands of cells / cubic millimeter blood)
BRN	-	brain
BUN	-	blood urea nitrogen (milligrams nitrogen / deciliter serum)
Ca	-	calcium (milligrams / deciliter serum)
CHOL	-	cholesterol (milligrams / deciliter serum)
CK	-	creatine kinase (international units / liter serum)
Cl	-	chloride (milliequivalents / liter serum)
CMM	-	cubic millimeter
CREA	-	creatinine (milligrams / deciliter serum)
EOS	-	eosinophils (thousands of cells / cubic millimeter blood)
GGT	-	gamma glutamyl transpeptidase (international units / liter serum)
GLOB	-	globulin (grams / deciliter serum)
GLU	-	glucose (milligrams / deciliter serum)
HCT	-	hematocrit (percent)
HGB	-	hemoglobin (grams / deciliter blood)
IMM NEU	-	immature neutrophils (thousands of cells / cubic millimeter blood)
K	-	potassium (milliequivalents / liter serum)
KID	-	kidneys
LIV	-	liver
LNG	-	lungs
LYM	-	lymphocytes (thousands of cells / cubic millimeter blood)
MAT NEU	-	mature neutrophils (thousands of cells / cubic millimeter blood)
MCH	-	mean corpuscular hemoglobin (picograms)
MCHC	-	mean corpuscular hemoglobin concentration (percent)
MCV	-	mean corpuscular volume (fl=femtoliter; 10^{-15} liter, equivalent to a cubic micron)
MILL	-	million(s)
MONO	-	monocytes (thousands of cells / cubic millimeter blood)
N	-	number
Na	-	sodium (milliequivalents / liter serum)
NRBC	-	nucleated red blood cells (number / 100 white blood cells)
PG	-	picogram (10^{-12} g)
PHOS	-	phosphorus (milligrams / deciliter serum)
PLT	-	platelet count (thousands / cubic millimeter blood)
RBC	-	red blood cell count (millions of cells / cubic millimeter blood)
SD	-	standard deviation
TBIL	-	total bilirubin (milligrams / deciliter serum)
THSN	-	thousand(s)
T PRO	-	total protein (grams protein / deciliter serum)
WBC	-	white blood cell count (thousands of cells / cubic millimeter blood)

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 2

Summary of Incidence[a] of Clinical Observations - Males

	Treatment (mg/kg/day)			
	Vehicle Control	Low	Mid	High
	0	50	200	600
Group:	1-M	2-M	3-M	4-M
Accidental Death	0	0	1	0
Terminal Sacrifice	10	10	9	20
Redness around the Eyes	1	0	0	1
Salivation	0	0	0	3
Discoloration Around Mouth	0	0	0	1
Redness Around Nose Fur	3	1	2	10
Discolored Inguinal Fur	0	1	0	18
Wet Inguinal Fur	0	0	0	6
Rough Hair Coat	0	1	0	0
Mass	0	1	0	0
Alopecia	0	0	1	1
Scab	0	1	1	0
Total Number of Animals	10	10	10	20

[a] Total number of animals exhibiting the clinical sign at some time during the study.

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 3

Summary of Incidence[a] of Clinical Observations - Females

	Treatment (mg/kg/day)			
	Vehicle Control	Low	Mid	High
	0	50	200	600
Group:	1-F	2-F	3-F	4-F
Terminal Sacrifice	10	10	10	20
Redness around the Eyes	0	1	0	1
Salivation	0	0	1	12
Red Nasal Discharge	0	0	0	1
Redness Around Nose Fur	2	2	3	5
Discolored Inguinal Fur	0	0	0	13
Wet Inguinal Fur	0	0	1	6
Ocular Opacity	0	1	1	0
Left Eye Dark Red	0	1	1	0
Alopecia	0	0	1	1
Tooth Loss	0	0	0	1
Swollen Limb	1	0	0	0
Total Number of Animals	10	10	10	20

[a] Total number of animals exhibiting the clinical sign at some time during the study.

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 4

Mean Male Weekly Body Weights (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-M	2-M	3-M	4-M
PREDOSE	MEAN	255	256	255	255
	S.D.	9.7	11.2	10.0	10.1
	N	10	10	10	20
DAY 7	MEAN	312	313	309	308
	S.D.	11.4	14.7	15.8	15.4
	N	10	10	10	20
DAY 14	MEAN	363	361	358	353
	S.D.	14.0	22.9	19.1	21.4
	N	10	10	10	20
DAY 21	MEAN	407	407	399	393
	S.D.	13.7	25.9	24.9	29.4
	N	10	10	10	20
DAY 28	MEAN	443	443	433	426
	S.D.	24.3	32.1	25.6	34.9
	N	10	10	10	20
DAY 35	MEAN	465	464	454	440
	S.D.	23.3	34.2	26.5	38.6
	N	10	10	9	20
DAY 42	MEAN	495	493	481	465
	S.D.	26.5	38.5	29.9	41.4
	N	10	10	9	20
DAY 49	MEAN	520	519	504	489
	S.D.	34.2	42.6	29.2	46.9
		10	10	9	20
DAY 56	MEAN	543	540	526	507
	S.D.	35.0	43.2	35.6	47.7
	N	10	10	9	20

TABLE 4 (cont.)

Mean Male Weekly Body Weights (g)

		Treatment (mg/kg/day)			
		Vehicle Control 0	Low 50	Mid 200	High 600
Period	Group:	1-M	2-M	3-M	4-M
DAY 63	MEAN	558	556	544	524
	S.D.	37.3	50.3	34.9	51.9
	N	10	10	9	20
DAY 70	MEAN	571	568	559	543
	S.D.	37.1	53.4	35.0	56.7
	N	10	10	9	20
DAY 77	MEAN	587	578	571	557
	S.D.	41.2	54.3	39.6	58.4
	N	10	10	9	20
DAY 84	MEAN	608	594	588	572
	S.D.	44.6	59.5	42.9	62.o
	N	10	10	9	20
DAY 91	MEAN	624	607	602	585
	S.D.	48.2	62.0	40.8	66.4
	N	10	10	9	20
DAY 98[a]	MEAN				583
	S.D.				78.5
	N				10
DAY 105[a]	MEAN				595
	S.D.				79.7
	N				10
DAY 112[a]	MEAN				612
	S.D.				82.1
	N				10
DAY 119[a]	MEAN				621
	S.D.				81.8
	N				10

[a] Recovery period

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 5

Mean Female Weekly Body Weights (g)

		Treatment (mg/kg/day)			
		Vehicle Control 0	Low 50	Mid 200	High 600
Period	Group:	1-F	2-F	3-F	4-F
PREDOSE	MEAN	198	199	199	199
	S.D.	10.3	11.2	10.1	10.3
	N	10	10	10	20
DAY 7	MEAN	221	218	224	221
	S.D.	9.6	16.9	14.1	15.3
	N	10	10	10	20
DAY 14	MEAN	241	241	243	241
	S.D.	12.8	17.7	17.5	18.4
	N	10	10	10	20
DAY 21	MEAN	254	258	263	257
	S.D.	16.4	17.7	15.8	19.3
	N	10	10	10	20
DAY 28	MEAN	271	273	272	269
	S.D.	16.7	21.5	17.8	20.4
	N	10	10	10	20
DAY 35	MEAN	277	282	283	274
	S.D.	15.1	22.4	19.9	19.5
	N	10	10	10	20
DAY 42	MEAN	288	290	292	287
	S.D.	16.3	20.2	21.5	22.7
	N	10	10	10	20
DAY 49	MEAN	294	301	299	296
	S.D.	19.4	22.5	20.5	25.4
		10	10	10	20
DAY 56	MEAN	301	306	307	303
	S.D.	18.9	24.0	21.3	26.2
	N	10	10	10	20

TABLE 5 (cont.)

Mean Female Weekly Body Weights (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-F	2-F	3-F	4-F
DAY 63	MEAN	306	313	310	307
	S.D.	23.6	25.0	22.6	25.8
	N	10	10	10	20
DAY 70	MEAN	312	318	316	314
	S.D.	24.4	29.9	21.1	26.5
	N	10	10	10	20
DAY 77	MEAN	317	326	322	320
	S.D.	21.5	30.9	19.9	28.0
	N	10	10	10	20
DAY 84	MEAN	323	329	330	326
	S.D.	26.8	31.9	21.9	29.6
	N	10	10	10	20
DAY 91	MEAN	327	335	334	330
	S.D.	24.8	37.6	21.2	29.3
	N	10	10	10	20
DAY 98[a]	MEAN				338
	S.D.				27.0
	N				10
DAY 105[a]	MEAN				344
	S.D.				27.2
	N				10
DAY 112[a]	MEAN				351
	S.D.				32.4
	N				10
DAY 119[a]	MEAN				355
	S.D.				36.6
	N				10

[a] Recovery period

TABLE 6

Mean Male Weekly and Cumulative Body Weight Gains (g)

		Treatment (mg/kg/day)			
		Vehicle Control 0	Low 50	Mid 200	High 600
Period	Group:	1-M	2-M	3-M	4-M
DAY 7	MEAN	58	57	54	53
	S.D.	4.7	6.4	7.7	6.8
	N	10	10	10	20
DAY 14	MEAN	51	49	49	45
	S.D.	7.8	16.1	5.1	7.3
	N	10	10	10	20
DAY 21	MEAN	44	46	40	40
	S.D.	8.5	8.3	7.0	9.0
	N	10	10	10	20
DAY 28	MEAN	36	37	34	33
	S.D.	13.5	8.3	4.9	6.6
	N	10	10	10	20
DAY 35	MEAN	22	20	23	14*
	S.D.	5.2	5.6	4.8	5.9
	N	10	10	9	20
DAY 42	MEAN	30	30	27	26
	S.D.	8.0	6.8	8.2	5.9
	N	10	10	9	20
DAY 49	MEAN	26	26	24	23
	S.D.	10.0	6.1	3.7	9.5
		10	10	9	20
DAY 56	MEAN	23	21	21	18
	S.D.	5.3	4.7	10.1	6.2
	N	10	10	9	20
DAY 63	MEAN	15	16	18	17
	S.D.	4.5	9.1	6.5	13.0
	N	10	10	9	20

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 6 (cont.)

Mean Male Weekly and Cumulative Body Weight Gains (g)

			Treatment (mg/kg/day)			
			Vehicle Control	Low	Mid	High
			0	50	200	600
Period		Group:	1-M	2-M	3-M	4-M
DAY 70	MEAN		13	12	15	19
	S.D.		7.3	5.2	3.3	10.4
	N		10	10	9	20
DAY 77	MEAN		16	11	12	13
	S.D.		8.3	3.0	5.7	8.7
	N		10	10	9	20
DAY 84	MEAN		21	16	17	15
	S.D.		6.1	8.9	5.1	7.2
	N		10	10	9	20
DAY 91	MEAN		17	13	14	13
	S.D.		5.3	5.5	3.7	5.9
	N		10	10	9	20
CUMULATIVE TOTAL	MEAN		370	352	347	330
	S.D.		50.3	59.5	36.3	57.5
	N		10	10	9	20
DAY 98[a]	MEAN					7
	S.D.					4.9
	N					10
DAY 105[a]	MEAN					12
	S.D.					3.8
	N					10
DAY 112[a]	MEAN					16
	S.D.					8.4
	N					10
DAY 119[a]	MEAN					10
	S.D.					5.4
	N					10
CUMULATIVE TOTAL	MEAN					367
	S.D.					72.6
	N					10

[a] Recovery Period

TABLE 7

Mean Female Weekly and Cumulative Body Weight Gains (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-F	2-F	3-F	4-F
DAY 7	MEAN	23	20	25	22
	S.D.	8.8	8.4	6.7	8.8
	N	10	10	10	20
DAY 14	MEAN	19	23	19	20
	S.D.	5.6	12.8	5.4	6.8
	N	10	10	10	20
DAY 21	MEAN	14	17	21	16
	S.D.	7.0	7.0	6.3	6.4
	N	10	10	10	20
DAY 28	MEAN	16	14	9	12
	S.D.	6.3	11.1	7.2	6.5
	N	10	10	10	20
DAY 35	MEAN	7	9	11	5
	S.D.	4.6	8.0	11.2	7.5
	N	10	10	10	20
DAY 42	MEAN	11	8	9	13
	S.D.	3.0	6.6	6.1	7.0
	N	10	10	10	20
DAY 49	MEAN	6	11	8	9
	S.D.	6.9	6.7	3.4	6.0
		10	10	10	20
DAY 56	MEAN	7	5	7	7
	S.D.	5.1	6.4	4.0	5.0
	N	10	10	10	20
DAY 63	MEAN	5	7	4	4
	S.D.	6.6	10.0	3.3	6.5
	N	10	10	10	20

TABLE 7 (cont.)

Mean Female Weekly and Cumulative Body Weight Gains (g)

			Treatment (mg/kg/day)			
			Vehicle Control	Low	Mid	High
			0	50	200	600
Period		Group:	1-F	2-F	3-F	4-F
DAY 70	MEAN		6	5	5	6
	S.D.		4.0	8.1	5.1	3.9
	N		10	10	10	20
DAY 77	MEAN		6	9	6	6
	S.D.		7.3	3.2	4.0	9.2
	N		10	10	10	20
DAY 84	MEAN		6	3	8	7
	S.D.		8.8	6.6	5.9	5.6
	N		10	10	10	20
DAY 91	MEAN		3	5	4	3
	S.D.		5.4	7.8	6.8	7.7
	N		10	10	10	20
CUMULATIVE TOTAL	MEAN		128	136	135	130
	S.D.		22.3	31.7	15.3	22.4
	N		10	10	10	20
DAY 98[a]	MEAN					5
	S.D.					12.6
	N					10
DAY 105[a]	MEAN					6
	S.D.					8.6
	N					10
DAY 112[a]	MEAN					7
	S.D.					11.3
	N					10
DAY 119[a]	MEAN					4
	S.D.					6.4
	N					10
CUMULATIVE TOTAL	MEAN					156
	S.D.					29.5
	N					10

[a] Recovery period

TABLE 8

Mean Male Weekly Food Consumption (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-M	2-M	3-M	4-M
DAY 7	MEAN	186	187	181	184
	S.D.	7.0	9.0	14.3	13.7
	N	10	10	10	20
DAY 14	MEAN	170	179	174	183
	S.D.	31.4	19.3	12.3	19.3
	N	10	10	10	20
DAY 21	MEAN	187	180	169	179
	S.D.	17.2	11.3	13.4	21.6
	N	10	10	10	20
DAY 28	MEAN	182	185	171	180
	S.D.	16.7	18.8	11.2	21.6
	N	10	10	10	20
DAY 35	MEAN	168	168	163	164
	S.D.	8.8	9.7	10.7	16.6
	N	10	10	9	20
DAY 42	MEAN	182	185	172	185
	S.D.	12.6	28.7	13.6	21.0
	N	10	10	9	20
DAY 49	MEAN	177	180	174	179
	S.D.	16.4	13.5	11.3	17.0
		10	10	9	20
DAY 56	MEAN	181	183	169	178
	S.D.	15.0	17.2	17.9	16.8
	N	10	10	9	20
DAY 63	MEAN	174	175	167	188
	S.D.	14.3	18.8	11.1	24.6
	N	10	10	9	20

TABLE 8 (cont.)

Mean Male Weekly Food Consumption (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-M	2-M	3-M	4-M
DAY 70	MEAN	171	177	166	183
	S.D.	17.2	30.7	11.2	28.3
	N	10	10	9	20
DAY 77	MEAN	165	163	155	175
	S.D.	12.4	16.0	15.7	20.3
	N	10	10	9	19
DAY 84	MEAN	172	164	158	172
	S.D.	17.2	14.4	13.0	21.5
	N	10	10	9	20
DAY 91	MEAN	169	161	154	173
	S.D.	16.3	11.7	10.1	27.7
	N	10	10	9	20
DAY 98[a]	MEAN				177
	S.D.				19.0
	N				10
DAY 105[a]	MEAN				198
	S.D.				22.4
	N				10
DAY 112[a]	MEAN				203
	S.D.				25.8
	N				10
DAY 119[a]	MEAN				201
	S.D.				23.6
	N				10

[a] Recovery period

TABLE 9

Mean Female Weekly Food Consumption (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-F	2-F	3-F	4-F
DAY 7	MEAN	127	129	132	121
	S.D.	8.6	15.1	10.9	11.4
	N	10	10	10	19
DAY 14	MEAN	122	125	125	130
	S.D.	9.5	13.4	9.7	19.3
	N	10	10	10	19
DAY 21	MEAN	124	125	128	123
	S.D.	10.7	11.2	9.1	11.1
	N	10	10	10	20
DAY 28	MEAN	130	129	134	130
	S.D.	12.8	16.2	13.8	17.0
	N	10	10	10	20
DAY 35	MEAN	120	120	117	122
	S.D.	11.2	10.8	23.4	10.4
	N	10	10	10	20
DAY 42	MEAN	124	127	127	138
	S.D.	13.1	11.8	10.9	17.7
	N	10	10	10	20
DAY 49	MEAN	122	122	129	130
	S.D.	14.1	9.5	12.2	15.5
		10	10	10	20
DAY 56	MEAN	128	120	126	130
	S.D.	19.4	11.7	9.5	13.8
	N	10	10	10	20
DAY 63	MEAN	126	126	126	130
	S.D.	22.0	14.4	7.6	15.2
	N	10	10	10	20

TABLE 9 (cont.)

Mean Female Weekly Food Consumption (g)

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Period	Group:	1-F	2-F	3-F	4-F
DAY 70	MEAN	122	122	122	133
	S.D.	29.3	15.1	5.8	18.6
	N	10	10	10	20
DAY 77	MEAN	116	115	119	123
	S.D.	16.0	16.2	8.4	13.5
	N	10	10	10	20
DAY 84	MEAN	121	111	120	125
	S.D.	20.2	15.0	11.5	16.3
	N	10	10	10	20
DAY 91	MEAN	113	108	121	118
	S.D.	19.9	15.0	11.7	12.4
	N	10	10	10	20
DAY 98[a]	MEAN				133
	S.D.				18.9
	N				10
DAY 105[a]	MEAN				146
	S.D.				13.6
	N				10
DAY 112[a]	MEAN				144
	S.D.				24.2
	N				10
DAY 119[a]	MEAN				143
	S.D.				29.2
	N				10

[a] Recovery period

TABLE 10

Mean Male Clinical Chemistry Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-M	2-M	3-M	4-M
Na	MEAN	145.3	1 ·5.4	145.1	145.5
	S.D.	1.06	0 99	1.21	2.36
	N	10	10	9	20
K	MEAN	5.41	5.54	5.65	5.68
	S.D.	0.431	0.464	0.247	0.553
	N	10	10	9	20
Cl	MEAN	100.6	102.5	101.8	101.6
	S.D.	1.81	2.34	2.68	2.52
	N	10	10	9	20
CK	MEAN	165	195	199	199
	S.D.	71.7	135.9	75.2	163.9
	N	10	10	9	20
ALK P	MEAN	174	200	205	245
	S.D.	38.3	45.3	44.2	91.0
	N	10	10	9	20
ALT	MEAN	30	28	27	33
	S.D.	2.8	5.5	4.0	4.6
	N	10	10	9	20
AST	MEAN	64	73	71	67
	S.D.	6.6	10.8	9.6	9.0
	N	10	10	9	20
GGT	MEAN	3	2	3	3
	S.D.	1.3	1.5	1.9	1.2
	N	10	10	9	20
BUN	MEAN	12.1	12.4	12.1	11.4
	S.D.	1.52	2.13	1.53	0.95
	N	10	10	9	20
CREA	MEAN	0.47	0.48	0.51	0.50
	S.D.	0.065	0.083	0.044	0.058
	N	10	10	9	20

TABLE 10 (cont.)

Mean Male Clinical Chemistry Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-M	2-M	3-M	4-M
T PRO	MEAN	6.4	6.5	6.2	6.3
	S.D.	0.48	0.16	0.36	0.34
	N	10	10	9	20
ALB	MEAN	4.0	4.1	4.1	4.3*
	S.D.	0.22	0.15	0.18	0.18
	N	10	10	9	20
GLOB	MEAN	2.4	2.3	2.1	2.0*
	S.D.	0.42	0.14	0.21	0.26
	N	10	10	9	20
A/G Ratio	MEAN	1.7	1.8	1.9	2.1*
	S.D.	0.35	0.14	0.14	0.24
	N	10	10	9	20
GLU	MEAN	126.5	140.9	132.1	128.7
	S.D.	17.27	35.08	15.21	25.53
	N	10	10	9	20
CHOL	MEAN	39.8	33.4	30.8*	30.5*
	S.D.	8.22	4.70	7.15	7.79
	N	10	10	9	20
Ca	MEAN	11.3	11.4	11.1	10.8
	S.D.	0.41	0.35	0.34	1.61
	N	10	10	9	20
PHOS	MEAN	9.3	9.8	9.9	10.0
	S.D.	0.69	0.72	0.51	0.97
	N	10	10	9	20
TBIL	MEAN	0.4	0.4	0.3	0.4
	S.D.	0.10	0.09	0.10	0.08
	N	10	10	9	20

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 11

Mean Female Clinical Chemistry Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-F	2-F	3-F	4-F
Na	MEAN	144.1	143.6	143.8	143.4
	S.D.	2.49	1.40	2.80	2.25
	N	10	10	10	20
K	MEAN	5.20	5.46	5.25	5.28
	S.D.	0.488	0.571	0.644	0.715
	N	10	10	10	20
Cl	MEAN	104.2	104.0	103.6	103.7
	S.D.	2.05	2.31	3.79	3.31
	N	10	10	10	20
CK	MEAN	188	156	182	136
	S.D.	104.5	71.7	102.8	48.3
	N	10	10	10	20
ALK P	MEAN	117	118	117	146
	S.D.	28.5	23.5	31.7	37.5
	N	10	10	10	20
ALT	MEAN	26	25	26	30
	S.D.	3.2	3.2	5.3	5.1
	N	10	10	10	20
AST	MEAN	67	67	65	70
	S.D.	11.6	10.0	11.1	8.1
	N	10	10	10	20
GGT	MEAN	2	4	3	3
	S.D.	1.4	1.4	1.7	1.3
	N	10	10	10	20
BUN	MEAN	13.6	13.5	12.6	11.0*
	S.D.	1.26	2.12	1.93	0.98
	N	10	10	10	20
CREA	MEAN	0.49	0.54	0.49	0.50
	S.D.	0.058	0.057	0.074	0.067
	N	10	10	10	20

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 11 (cont.)

Mean Female Clinical Chemistry Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control 0	Low 50	Mid 200	High 600
Parameter	Group:	1-F	2-F	3-F	4-F
T PRO	MEAN	6.6	6.6	6.6	6.7
	S.D.	0.26	0.33	0.46	0.37
	N	10	10	10	20
ALB	MEAN	4.4	4.5	4.4	4.7
	S.D.	0.29	0.26	0.43	0.25
	N	10	10	10	20
GLB	MEAN	2.2	2.1	2.1	2.1
	S.D.	0.22	0.24	0.17	0.21
	N	10	10	10	20
A/G Ratio	MEAN	2.1	2.1	2.1	2.3
	S.D.	0.26	0.26	0.25	0.24
	N	10	10	10	20
GLU	MEAN	125.7	124.7	119.2	115.3
	S.D.	31.31	21.05	17.56	16.70
	N	10	10	10	20
CHOL	MEAN	37.5	37.4	36.1	36.8
	S.D.	8.37	6.48	5.48	11.55
	N	10	10	10	20
Ca	MEAN	11.1	11.0	11.0	11.0
	S.D.	0.24	0.26	0.62	0.43
	N	10	10	10	20
PHOS	MEAN	9.0	9.0	8.9	9.6
	S.D.	0.65	0.93	1.70	1.57
	N	10	9	10	20
TBIL	MEAN	0.4	0.4	0.4	0.5
	S.D.	0.06	0.11	0.11	0.10
	N	10	10	10	20

TABLE 12

Mean Male Clinical Chemistry Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control 0	Low 50	Mid 200	High 600	High (Recovery) 600
Parameter	Group:	1-M	2-M	3-M	4-M	4-M
Na	MEAN	142.4	142.7	143.0	142.4	141.6
	S.D.	1.49	0.65	1.40	1.32	1.30
	N	10	10	9	10	10
K	MEAN	4.32	4.51	4.37	4.54	4.33
	S.D.	0.397	0.339	0.328	0.270	0.240
	N	10	10	9	10	10
Cl	MEAN	105.3	105.3	106.0	106.2	104.7
	S.D.	2.59	2.33	1.72	2.18	0.88
	N	10	10	9	10	10
CK	MEAN	594	962	934	595	884
	S.D.	340.4	929.8	799.2	389.1	353.4
	N	10	10	9	10	10
ALK P	MEAN	107	112	121	156*	77
	S.D.	28.1	26.5	33.7	56.2	20.5
	N	10	10	9	10	10
ALT	MEAN	29	30	25	33	25
	S.D.	6.4	9.8	7.0	9.1	4.4
	N	10	10	9	10	10
AST	MEAN	72	91	86	85	89
	S.D.	18.9	31.9	25.5	25.0	16.7
	N	10	10	9	10	10
GGT	MEAN	3	2	2	2	1
	S.D.	0.9	0.9	1.0	1.0	1.5
	N	10	10	9	10	10
BUN	MEAN	11.8	12.3	12.3	11.5	13.5
	S.D.	1.45	1.87	1.22	1.30	1.53
	N	10	10	9	10	10
CREA	MEAN	0.42	0.43	0.42	0.47	0.48
	S.D.	0.092	0.079	0.110	0.065	0.067
	N	10	10	9	10	10

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 12 (cont.)

Mean Male Clinical Chemistry Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-M	2-M	3-M	4-M	4-M
T PRO	MEAN	6.0	5.9	6.0	6.1	6.0
	S.D.	0.38	0.24	0.31	0.42	0.25
	N	10	10	9	10	10
ALB	MEAN	3.6	3.6	3.7	3.8	3.7
	S.D.	0.23	0.19	0.19	0.22	0.09
	N	10	10	9	10	10
GLOB	MEAN	2.4	2.3	2.3	2.3	2.3
	S.D.	0.27	0.18	0.16	0.24	0.24
	N	10	10	9	10	10
A/G Ratio	MEAN	1.6	1.6	1.6	1.7	1.7
	S.D.	0.19	0.17	0.11	0.15	0.17
	N	10	10	9	10	10
GLU	MEAN	1. 0.2	134.6	136.9	121.1*	168.4
	S.D.	22.80	15.11	15.76	13.14	26.39
	N	10	10	9	10	10
CHOL	MEAN	38.2	33.1	31.6	45.3	35.3
	S.D.	6.83	9.13	9.93	15.99	10.10
	N	10	10	9	10	10
Ca	MEAN	10.2	10.2	10.2	10.2	9.9
	S.D.	0.22	0.29	0.37	0.23	0.24
	N	10	10	9	10	10
PHOS	MEAN	6.5	6.7	7.0	7.6*	5.8
	S.D.	0.64	0.80	0.68	0.58	0.59
	N	10	10	9	10	10
TBIL	MEAN	0.4	0.4	0.5	0.5	0.5
	S.D.	0.12	0.10	0.09	0.14	0.09
	N	10	10	9	10	10

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 13

Mean Female Clinical Chemistry Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-F	2-F	3-F	4-F	4-F
Na	MEAN	142.1	141.6	141.7	138.9*	140.9
	S.D.	1.10	0.96	2.07	2.83	1.47
	N	10	10	10	10	10
K	MEAN	3.94	4.13	4.01	3.86	4.06
	S.D.	0.195	0.200	0.119	0.292	0.259
	N	10	10	10	10	10
Cl	MEAN	105.9	106.2	106.1	103.0*	107.0
	S.D.	2.32	1.63	1.05	3.81	1.68
	N	10	10	10	10	10
CK	MEAN	404	574	381	362	532
	S.D.	172.6	346.4	228.3	242.5	369.7
	N	10	10	10	10	10
ALK P	MEAN	59	57	55	78	38
	S.D.	14.8	10.3	14.9	24.5	10.1
	N	10	10	10	10	10
ALT	MEAN	21	22	23	24	27
	S.D.	2.3	4.0	7.3	4.1	7.1
	N	10	10	10	10	10
AST	MEAN	60	75	62	60	77
	S.D.	16.5	18.6	15.2	15.0	21.4
	N	10	10	10	10	10
GGT	MEAN	2	3	3	3	2
	S.D.	1.1	1.6	1.0	1.4	1.4
	N	10	10	10	10	10
BUN	MEAN	14.5	14.0	11.9	13.5	16.2
	S.D.	1.34	2.57	1.49	4.61	2.31
	N	10	10	10	10	10
CREA	MEAN	0.53	0.51	0.53	0.56	0.55
	S.D.	0.106	0.085	0.099	0.110	0.099
	N	10	10	10	10	10

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 13 (cont.)

Mean Female Clinical Chemistry Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-F	2-F	3-F	4-F	4-F
T PRO	MEAN	6.2	6.3	6.6	6.5	6.3
	S.D.	0.44	0.41	0.69	0.68	0.66
	N	10	10	10	10	10
ALB	MEAN	4.1	4.3	4.5	4.5	4.3
	S.D.	0.29	0.36	0.58	0.56	0.51
	N	10	10	10	10	10
GLB	MEAN	2.1	2.0	2.1	2.1	2.0
	S.D.	0.21	0.17	0.19	0.20	0.18
	N	10	10	10	10	10
A/G Ratio	MEAN	2.0	2.1	2.1	2.1	2.1
	S.D.	0.16	0.22	0.26	0.23	0.18
	N	10	10	10	10	10
GLU	MEAN	131.8	136.4	140.1	132.8	150.7
	S.D.	7.65	11.72	14.48	15.91	19.18
	N	10	10	10	10	10
CHOL	MEAN	36.2	35.2	38.8	51.2*	28.7
	S.D.	8.83	6.64	6.24	17.84	12.93
	N	10	10	10	10	10
Ca	MEAN	10.1	10.2	10.4	10.5	10.0
	S.D.	0.35	0.24	0.42	0.63	0.36
	N	10	10	10	10	10
PHOS	MEAN	6.1	6.1	6.4	7.5*	5.3
	S.D.	1.08	1.27	1.18	1.24	0.80
	N	10	10	10	10	10
TBIL	MEAN	0.5	0.5	0.4	0.5	0.5
	S.D.	0.08	0.10	0.08	0.07	0.07
	N	10	10	10	10	10

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 14

Mean Male Hematology Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-M	2-M	3-M	4-M
WBC	MEAN	16.1	18.5	16.0	15.7
	S.D.	3.09	7.21	4.27	3.78
	N	10	10	9	20
RBC	MEAN	7.87	7.46	7.97	7.74
	S.D.	0.352	0.442	0.713	0.548
	N	10	10	9	20
HGB	MEAN	15.9	15.4	15.7	15.8
	S.D.	0.72	0.65	0.75	0.86
	N	10	10	9	20
HCT	MEAN	44.6	43.0	44.4	44.5
	S.D.	1.94	2.54	2.57	2.77
	N	10	10	9	20
MCV	MEAN	56.8	57.6	56.0	57.6
	S.D.	1.23	1.20	3.54	1.67
	N	10	10	9	20
MCH	MEAN	20.2	20.7	19.8	20.5
	S.D.	0.53	0.60	1.74	0.73
	N	10	10	9	20
MCHC	MEAN	35.6	35.9	35.4	35.5
	S.D.	0.48	1.01	1.64	0.79
	N	10	10	9	20
PLT	MEAN	1156	1147	1109	1081
	S.D.	102.2	110.1	93.3	108.7
	N	10	10	9	20

TABLE 15

Mean Female Hematology Parameters
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-F	2-F	3-F	4-F
WBC	MEAN	14.2	13.3	14.6	12.4
	S.D.	5.09	2.45	3.69	4.02
	N	10	10	10	20
RBC	MEAN	7.90	7.66	7.69	7.80
	S.D.	0.517	0.420	0.506	0.458
	N	10	10	10	20
HGB	MEAN	15.8	15.3	15.7	15.8
	S.D.	0.62	0.49	0.78	0.60
	N	10	10	10	20
HCT	MEAN	44.9	43.4	44.7	44.6
	S.D.	2.42	2.17	2.45	2.04
	N	10	10	10	20
MCV	MEAN	56.9	56.7	58.1	57.3
	S.D.	1.34	1.15	1.23	1.79
	N	10	10	10	20
MCH	MEAN	20.0	20.1	20.4	20.3
	S.D.	0.77	0.73	0.79	0.87
	N	10	10	10	20
MCHC	MEAN	35.2	35.4	35.2	35.4
	S.D.	0.85	1.06	0.88	1.09
	N	10	10	10	20
PLT	MEAN	1182	1167	1149	1081
	S.D.	144.7	93.4	224.2	89.6
	N	10	10	10	20

TABLE 16

Mean Male Hematology Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-M	2-M	3-M	4-M	5-M
WBC	MEAN	9.1	8.1	8.1	7.7	7.8
	S.D.	2.70	2.50	1.74	1.76	1.24
	N	10	10	9	10	10
RBC	MEAN	8.94	8.50	8.98	8.72	8.51
	S.D.	0.375	0.483	0.565	0.275	0.423
	N	10	10	9	10	10
HGB	MEAN	15.6	15.3	15.8	15.4	15.4
	S.D.	0.52	0.76	0.77	0.53	0.58
	N	10	10	9	10	10
HCT	MEAN	43.9	42.2	44.1	43.3	41.6
	S.D.	1.65	2.72	2.12	1.60	1.99
	N	10	10	9	10	10
MCV	MEAN	49.1	49.7	49.2	49.6	49.0
	S.D.	1.17	1.09	1.76	1.66	1.62
	N	10	10	9	10	10
MCH	MEAN	17.5	18.0	17.7	17.7	18.2
	S.D.	0.45	0.73	0.85	0.68	0.61
	N	10	10	9	10	10
MCHC	MEAN	35.6	36.3	35.9	35.6	37.1
	S.D.	0.67	1.07	0.60	0.67	0.60
	N	10	10	9	10	10
PLT	MEAN	1092	1098	1041	1125	1083
	S.D.	134.1	120.8	100.9	145.9	112.6
	N	10	10	9	10	10

TABLE 17

Mean Female Hematology Parameters
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-F	2-F	3-F	4-F	5-F
WBC	MEAN	5.5	5.6	5.4	5.7	4.6
	S.D.	2.05	1.53	1.64	1.99	1.55
	N	10	10	10	10	10
RBC	MEAN	7.88	8.01	7.90	8.34	7.70
	S.D.	0.729	0.354	0.578	0.548	0.423
	N	10	10	10	10	10
HGB	MEAN	14.8	15.0	15.2	15.3	15.1
	S.D.	0.88	0.48	0.82	0.78	0.57
	N	10	10	10	10	10
HCT	MEAN	41.0	41.4	41.9	43.3	39.9
	S.D.	3.15	1.91	2.93	2.33	1.67
	N	10	10	10	10	10
MCV	MEAN	52.1	51.7	53.0	52.0	51.9
	S.D.	1.65	1.18	1.03	1.24	1.33
	N	10	10	10	10	10
MCH	MEAN	18.9	18.7	19.2	18.4	19.6
	S.D.	0.89	0.67	0.53	0.68	0.78
	N	10	10	10	10	10
MCHC	MEAN	36.2	36.2	36.3	35.4	37.7
	S.D.	0.79	0.86	0.83	0.54	0.64
	N	10	10	10	10	10
PLT	MEAN	1094	1089	1011	1053	1008
	S.D.	153.3	132.0	97.2	125.7	105.7
	N	10	10	10	10	10

TABLE 18

Mean Male Absolute Differential White Blood Cell Counts
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control 0	Low 50	Mid 200	High 600
Parameter	Group:	1-M	2-M	3-M	4-M
NRBC	MEAN	0	0	0	0.2
	S.D.	0	0.3	0	0.5
	N	10	10	9	20
MAT NEU	MEAN	2.4	4.3	2.0	2.3
	S.D.	0.92	4.54	0.48	1.15
	N	10	10	9	20
LYM	MEAN	12.8	13.2	13.2	12.7
	S.D.	2.82	2.84	3.55	2.88
	N	10	10	9	20
MONO	MEAN	0.8	0.9	0.7	0.7
	S.D.	0.28	0.47	0.44	0.25
	N	10	10	9	20
EOS	MEAN	0.1	0.1	0.1	0.1
	S.D.	0.08	0.13	0.09	0.08
	N	10	10	9	20
BASO	MEAN	0	0	0	0
	S.D.	0	0	0	0
	N	10	10	9	20
IMM NEU	MEAN	0	0	0	0
	S.D.	0	0	0	0
	N	10	10	9	20

TABLE 19

Mean Female Absolute Differential White Blood Cell Counts
30-Day Interim

		Treatment (mg/kg/day)			
		Vehicle Control	Low	Mid	High
		0	50	200	600
Parameter	Group:	1-F	2-F	3-F	4-F
NRBC	MEAN	0	0	0	0
	S.D.	0	0	0	0
	N	10	10	10	20
MAT NEU	MEAN	1.9	1.3	2.1	1.6
	S.D.	0.95	0.28	0.74	1.30
	N	10	10	10	20
LYM	MEAN	11.4	11.4	11.7	10.2
	S.D.	4.08	2.51	2.97	3.23
	N	10	10	10	20
MONO	MEAN	0.8	0.6	0.8	0.6
	S.D.	0.41	0.17	0.27	0.41
	N	10	10	10	20
EOS	MEAN	0.1	0.0	0.1	0.1
	S.D.	0.09	0.03	0.16	0.07
	N	10	10	10	20
BASO	MEAN	0	0	0	0
	S.D.	0	0	0	0
	N	10	10	10	20
IMM NEU	MEAN	0	0	0	0
	S.D.	0	0	0	0
	N	10	10	10	20

TABLE 20

Mean Male Absolute Differential White Blood Cell Counts
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Parameter	Group:	1-M	2-M	3-M	4-M	5-M
NRBC	MEAN	0	0	0	0	0
	S.D.	0	0	0.7	0	0
	N	10	10	9	10	10
MAT NEU	MEAN	1.8	1.7	1.4	1.5	1.0
	S.D.	1.07	1.10	0.36	0.75	0.29
	N	10	10	9	10	10
LYM	MEAN	7.1	6.2	6.4	6.0	6.6
	S.D.	2.78	2.16	1.59	2.16	1.23
	N	10	10	9	10	10
MONO	MEAN	0.1	0.2	0.3*	0.2*	0.2
	S.D.	0.09	0.09	0.17	0.18	0.10
	N	10	10	9	10	10
EOS	MEAN	0.1	0.1	0.0	0.0	0.1
	S.D.	0.06	0.09	0.07	0.05	0.07
	N	10	10	9	10	10
BASO	MEAN	0	0	0	0	0
	S.D.	0	0	0	0	0
	N	10	10	9	10	10
IMM NEU	MEAN	0	0	0	0	0
	S.D.	0	0	0	0	0
	N	10	10	9	10	10

* significantly different from vehicle control, $p \leq 0.05$

TABLE 21

Mean Female Absolute Differential White Blood Cell Counts
Terminal and Recovery

		Treatment (mg/kg/day)				
		Vehicle Control 0	Low 50	Mid 200	High 600	High (Recovery) 600
Parameter	Group:	1-F	2-F	3-F	4-F	5-F
NRBC	MEAN	0	0	0	0	0
	S.D.	0	0	0	0	0
	N	10	10	10	10	10
MAT NEU	MEAN	0.8	0.7	0.9	1.0	0.7
	S.D.	0.48	0.32	0.69	0.39	0.45
	N	10	10	10	10	10
LYM	MEAN	4.6	4.7	4.2	4.4	3.7
	S.D.	1.93	1.52	1.52	2.08	1.34
	N	10	10	10	10	10
MONO	MEAN	0.1	0.1	0.1	0.2	0.2
	S.D.	0.14	0.10	0.08	0.17	0.11
	N	10	10	10	10	10
EOS	MEAN	0.1	0.1	0.1	0.1	0
	S.D.	0.07	0.07	0.09	0.09	0.07
	N	10	10	10	10	10
BASO	MEAN	0	0	0.0	0	0
	S.D.	0	0	0.03	0	0
	N	10	10	10	10	10
IMM NEU	MEAN	0	0	0	0	0
	S.D.	0	0	0	0	0
	N	10	10	10	10	10

TABLE 22

Mean Male Absolute Organ Weights (g)

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Organ	Group:	1-M	2-M	3-M	4-M	5-M
ADR	MEAN	0.062	0.059	0.058	0.063	0.060
	S.D.	0.010	0.015	0.011	0.010	0.008
	N	10	10	9	10	10
BRN	MEAN	2.25	2.28	2.23	2.19	2.24
	S.D.	0.073	0.090	0.094	0.084	0.112
	N	10	10	9	10	10
KID	MEAN	3.92	3.95	4.10	4.16	4.05
	S.D.	0.326	0.262	0.610	0.464	0.491
	N	10	10	9	10	10
LIV	MEAN	19.28	18.91	18.38	20.90	17.38
	S.D.	1.843	3.074	2.885	3.313	2.222
	N	10	10	9	10	10
LNG	MEAN	2.19	2.19	2.20	2.06	2.04
	S.D.	0.299	0.292	0.134	0.158	0.229
	N	10	10	9	10	10
TESTES	MEAN	4.15	3.78	4.04	4.00	3.91
	S.D.	0.290	0.595	0.336	0.250	0.612
	N	10	10	9	10	10

TABLE 23

Mean Female Absolute Organ Weights (g)

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Organ	Group:	1-F	2-F	3-F	4-F	5-F
ADR	MEAN	0.075	0.078	0.085	0.082	0.084
	S.D.	0.007	0.012	0.013	0.015	0.015
	N	10	10	10	10	10
BRN	MEAN	2.06	2.06	2.11	2.06	2.11
	S.D.	0.080	0.083	0.094	0.050	0.059
	N	10	10	10	10	10
KID	MEAN	2.34	2.23	2.38	2.51	2.38
	S.D.	0.314	0.228	0.116	0.264	0.248
	N	10	10	10	10	10
LIV	MEAN	9.44	9.13	10.05	11.78*	9.71
	S.D.	1.601	0.774	0.967	1.444	1.411
	N	10	10	10	10	10
LNG	MEAN	1.63	1.73	1.66	1.60	1.63
	S.D.	0.187	0.140	0.106	0.150	0.140
	N	10	10	10	10	10
OVARIES	MEAN	0.128	0.123	0.122	0.142	0.142
	S.D.	0.023	0.039	0.042	0.058	0.036
	N	10	10	10	10	9

* = significantly different from vehicle control, $p \leq 0.05$

TABLE 24

Mean Male Relative[a] Organ Weights

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Organ	Group:	1-M	2-M	3-M	4-M	5-M
FBW[b]	MEAN	602	584	576	562	595
	S.D.	46.4	60.4	40.1	52.2	81.8
	N	10	10	9	10	10
ADR	MEAN	0.011	0.010	0.010	0.011	0.010
	S.D.	0.002	0.002	0.002	0.001	0.001
	N	10	10	9	10	10
BRN	MEAN	0.38	0.39	0.39	0.39	0.38
	S.D.	0.033	0.032	0.035	0.035	0.044
	N	10	10	9	10	10
KID	MEAN	0.65	0.68	0.71	0.74*	0.68
	S.D.	0.052	0.052	0.082	0.045	0.039
	N	10	10	9	10	10
LIV	MEAN	3.20	3.23	3.19	3.71*	2.93
	S.D.	0.158	0.336	0.402	0.288	0.274
	N	10	10	9	10	10
LNG	MEAN	0.37	0.38	0.38	0.37	0.34
	S.D.	0.045	0.052	0.027	0.038	0.042
	N	10	10	9	10	10
TESTES	MEAN	0.69	0.65	0.71	0.72	0.67
	S.D.	0.060	0.101	0.092	0.089	0.136
	N	10	10	9	10	10

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] FBW = Fasted Body Weight (g)
* = significantly different from vehicle control, $p \leq 0.05$

TABLE 25

Mean Female Relative[a] Organ Weights

		Treatment (mg/kg/day)				
		Vehicle Control	Low	Mid	High	High (Recovery)
		0	50	200	600	600
Organ	Group:	1-F	2-F	3-F	4-F	5-F
FBW[b]	MEAN	309	317	316	308	336
	S.D.	23.4	34.8	20.0	28.2	33.9
	N	10	10	10	10	10
ADR	MEAN	0.025	0.025	0.027	0.027	0.025
	S.D.	0.003	0.005	0.005	0.004	0.005
	N	10	10	10	10	10
BRN	MEAN	0.67	0.66	0.67	0.68	0.63
	S.D.	0.067	0.075	0.047	0.065	0.059
	N	10	10	10	10	10
KID	MEAN	0.76	0.71	0.76	0.82	0.71
	S.D.	0.059	0.088	0.051	0.059	0.040
	N	10	10	10	10	10
LIV	MEAN	3.04	2.90	3.19	3.82*	2.88
	S.D.	0.365	0.330	0.357	0.223	0.207
	N	10	10	10	10	10
LNG	MEAN	0.53	0.55	0.53	0.52	0.49
	S.D.	0.071	0.059	0.052	0.047	0.079
	N	10	10	10	10	10
OVARIES	MEAN	0.041	0.040	0.039	0.046	0.043
	S.D.	0.006	0.015	0.014	0.018	0.011
	N	10	10	10	10	9

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] FBW = Fasted Body Weight (g)
* = significantly different from vehicle control, $p \leq 0.05$

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

TABLE 26

Summary of Gross Necropsy Observations
(10 rats/sex/group)

	Treatment (mg/kg/day)									
	Vehicle Control 0		Low 50		Mid 200		High 600		High (Recovery) 600	
Tissue and Observation / Group:	1-M	1-F	2-M	2-F	3-M	3-F	4-M	4-F	4-M	4-F
No Gross Lesions	9	8	8	8	7	9	8	10[a]	8	10
Mandibular Lymph Nodes										
red/dark red	--[b]	1	--	--	1	--	--	--	1	--
enlarged	1	--	--	--	1	--	--	--	1	--
Tibia										
lesion (fracture)	--	1	--	--	--	--	--	--	--	--
Adrenals										
small, unilateral	--	--	1	--	--	--	--	--	--	--
Testes										
small, white (right)	--	--	1	--	--	--	--	--	--	--
absent (left)	--	--	--	--	--	--	--	--	1	--
Eye										
opaque (left)	--	--	--	1	--	1	--	--	--	--
Thymus										
focus, red	--	--	--	1	--	--	--	--	--	--
mottled	--	--	--	--	--	--	1	--	--	--
Lung										
enlarged	--	--	--	--	1[c]	--	--	--	--	--
Large Intestine, Cecum										
focus, red	--	--	--	--	1	--	--	--	--	--
Liver										
pale	--	--	--	--	--	--	1	--	--	--

[a] One high dose female (animal no. 71) died as a result of a gavage error during the initial week of dosing and was replaced (animal no. 799). Gross observations (*i.e.* pale, mottled red) seen in the lungs of this animal at necropsy are not included in this table.

[b] -- = zero incidence

[c] Animal died due to gavage error (accidental death).

VII. APPENDICES

PROTOCOL

1. **TITLE:** **90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group**

2. **IITRI PROJECT NUMBER:** L08512; Study Number 2

3. **SPONSOR:** Koch Industries, Inc.
PO Box 2256
Wichita, KS 67201

4. **TESTING FACILITY:** **IIT Research Institute**
Life Sciences Research
10 West 35th Street
Chicago, IL 60616

5. **OBJECTIVE:** The objective of this study is to determine the toxicity of the test substance when administered by oral gavage 5 days/week for at least 90 days to rats.

6. **PROPOSED STUDY DATES:**

   a. **Experimental Initiation:** August 30, 1994
   b. **Experimental Termination:** December 27, 1994
   c. **Draft Report Submission:** March 1, 1995

7. **PROTOCOL APPROVAL:**

   a. **Study Director:** William D. Johnson Date: 8/30/94
   William Johnson, PhD, DABT
   312/567-4941

   b. **Manager of Research:** D R McCormick Date: 8/30/94
   David McCormick, PhD, DABT

   c. **Sponsor:** Carol Komin Date: 8/29/94
   Carol Komin, B.S.
   316/832-6720

8. **COMPLIANCE:** This protocol complies with the minimum requirements of US EPA TSCA testing guideline 40 CFR 798.2650 as modified by 40 CFR 799.5075 (FR, Vol. 58. No. 216, 1993, pp 59681-82) and its GLP requirements at 40 CFR Part 792.

9. Test and Control Substances

a. **Test Substance Identification:** 1,3,5-trimethylbenzene
1,3,5-TMB
TMB
mesitylene

CAS No. --	108-67-8
Purity --	99%
Physical state --	clear liquid
Color --	colorless
Odor --	sweet aromatic
Lot number --	4388-01
Supplier --	Koch Chemical Company P.O. Box 2608 Corpus Christi, TX

Documentation of the methods of test substance synthesis, fabrication or derivation will be the responsibility of the Sponsor.

b. **Control Substance (Vehicle) Identification:** Corn Oil
Lot number -- 66580
Supplier -- Best Foods,
Englewood Cliffs, NJ

c. **Handling Precautions:** *Prior* to working with the test substance, study personnel will be familiarized with and will have access to the test substance's Material Safety Data Sheet (MSDS). When working with the test substance, personnel must wear:

Gloves --	two pairs (latex over polyethylene)
Respirator --	dust/mist
Lab Clothing --	frock
Other --	eye protection

d. **Storage:** The test and vehicle control substances will be stored at room temperature (approximately 24°C).

e. **Preparation:** Preparation of the dosing formulation will be documented in the raw data and reflected appropriately in the study report. The test substance will be delivered in a vehicle and its delivered dose will be presented on a mg per kg body weight per day basis.

f. **Sample Retention & Disposition:** The receipt and dispensation of the test and vehicle control substances will be recorded. The residual test substance will be returned to the Sponsor.

g. **Stability & Solubility:** IIT Research Institute will be responsible for the analytical documentation of the identity, composition, purity and stability (relative to laboratory storage conditions) of the *bulk* test substance. These data will be verified and approved by the Sponsor prior to initiation of dosing. Characterization of the corn oil vehicle will be provided by the supplier; however, stability of the corn oil vehicle will be determined by analysis of peroxide content by IITRI.

The specifics of formulated test substance stability and/or solubility will be documented in the raw data and reflected appropriately in the study report. The stability of the test substance in the vehicle will be determined by IITRI. Solubility will be described. Stability will be determined for the low and high concentrations being tested. The stability of the test substance will be established at 24 hours, and 1 and 2 weeks after formulation.

h. **Concentration & Homogeneity:** The frequency of determination of test substance concentration will reflect the stability of the material in the vehicle, while also demonstrating the ability to formulate the test material correctly and consistently. The specifics of test substance concentration and homogeneity will be documented in the raw data and reflected appropriately in the study report.

At a minimum, the first 2 formulations will be analyzed for homogeneity and concentration at all dose levels. This will be followed by a weekly concentration analysis of the low and high dose concentrations for 3 weeks. Similar biweekly concentration analyses will then be conducted. Dosing formulations will be considered acceptable for administration when test substance concentration is within ± [10%] of target concentration.

10. TEST SYSTEM

a. **Model:** Male and female Sprague-Dawley CD rats (Crl:CD® BR; Charles River Laboratories, Inc., Portage, MI) will be purchased for use in this study. The animals will weigh approximately 125-150 grams upon arrival. The animals will be approximately 8 weeks of age at initiation of dosing and the weight variation will not exceed ± 20% of the mean weight for each sex.

b. **Selection Justification:** The Sprague-Dawley CD rat is a mammalian model widely used in toxicity testing. A significant body of experience with this animal exists against which its reaction to the test substance can be evaluated.

c. **Housing:** Rats will be individually-housed in stainless steel cages with wire mesh floors during the quarantine and dosing periods. The cages will be suspended over excrement pans. Absorbent animal cage boards or papers will be used in all excrement pans to absorb excreta and to control odor.

d. **Cleaning and Sanitation:** Animal rooms and cages will be cleaned and sanitized prior to placing animals in them. Cages and racks will be cleaned, sanitized and changed as needed during the study. Cage boards or papers will be changed at least twice weekly. All cleaning operations will be documented.

e. **Food:** Purina Certified Rodent Chow 5002 (Ralston Purina Co., St. Louis, MO) will be provided *ad libitum*, except for a period of 16-20 hours preceding blood collection. Analysis of the diet provided by the manufacturer will be included in the study notebook.

f. **Water:** Either city water, via bottles and sipper tubes, or water from a reverse-osmosis purifier, delivered via an automatic watering system, will be provided *ad libitum*. Both water supplies are periodically monitored for bacterial contamination and chemical composition. A copy of the relevant analysis will kept on file at IITRI. Animals racks using an automatic watering system will be inspected regularly for water flow.

g. **Animal Identification:** Rats selected for the study will receive a permanent identification number tag which will be inserted through the pinna of the right ear. The identifying numbers assigned will be unique within the animal room used.

h. **Environmental Control:** Animals rooms will be lighted automatically with fluorescent lights and maintained on a 12-hour light/12-hour dark cycle. Room temperature and humidity will be regulated to avoid extreme fluctuations. The temperature and relative humidity ranges will be approximately 22±3°C and 50±20%, respectively.

11. EXPERIMENTAL DESIGN

A 28-day Recovery group will be concurrently treated with a core study group. The Recovery group will remain on-test, untreated, for at least 28 days after the scheduled necropsy of the Core group. The study design is as follows:

Table . Minimum Toxicology Determinations in a 90-day Subchronic Oral Toxicity Study

	Number of Animals Designated									
			28-Day		(animals from the core and recovery groups)					
Dose	Core		Recovery		Hematology		Clinical Chemistry		Ophthalmology	
Group	M	F	M	F	M	F	M	F	M	F
Control	10	10	--	--	10	10	10	10	10	10
Low	10	10	--	--	10	10	10	10	10	10
Mid	10	10	--	--	10	10	10	10	10	10
High	10	10	10	10	20	20	20	20	20	20
Totals:	40	40	10	10	(50	50)	(50	50)	(50	50)
Grand total:	100 (50/sex)									

12. METHODS:

a. **Quarantine:** Animals will be held in quarantine for approximately two weeks prior to assignment to test groups. During the quarantine period, the rats will be observed at least daily. At the end of the period, they will receive a thorough physical examination to ensure their suitability for use as test animals.

b. **Assignment to Groups:** Animals will be assigned to groups using a constrained random process such that all groups tested will be comparable in pre-test body weight and all other relevant parameters.

c. **Dose Levels:** Graded treatment levels were selected by the Sponsor with the intention that the high dose should result in toxic effects without inducing an incidence of fatalities which would jeopardize the integrity of the study, while the mid dose should induce minimal observable toxic effects. The low dose should establish a no-observed-adverse-effect level (NOAEL). The dose levels selected for this study are:

Control:	0 mg/kg
Low:	50 mg/kg
Mid:	200 mg/kg
High:	600 mg/kg

Dosages will be adjusted to the most current weekly body weights.

d. **Test Substance Administration:** Test substance formulations will be administered to the treatment groups in graded concentrations via oral gavage using an appropriately sized intubation feeding needle. The control group will be administered vehicle only (vehicle control), also by oral gavage. Animals will be dosed daily, 5 days per week, for at least 90 days. Dosing will be done at approximately the same time each day. Animals will be fasted for 16-20 hours prior to scheduled blood collection and all specifics of test substance administration will be documented in the raw data and reflected appropriately in the study report.

The oral route of administration was selected because it was specified as an appropriate option in the TSCA section 4 test rule for TMB.

e. **Injured or Diseased Animals:** Rats on-test will not be treated for any disease or injury. A complete record of the circumstances and the disposition of the affected rats will be made in the study notebook. Diseased rats which pose a potential infectious threat to the remaining rats will be isolated.

f. **Experimental Termination:** The rats will be euthanized at designated times according to methods accepted by the American Veterinary Medical Association (JAVMA 202 (2), 229-249, 1993).

13. END-POINT OBSERVATIONS

a. **Survival Checks:** All rats will be observed for moribundity and mortality twice daily on weekdays and once daily on weekends and holidays during the study. Any animal judged not likely to survive until the next scheduled observation period will be sacrificed and necropsied. These animals will be recorded as sacrificed *in extremis* in the study notebook. Dead animals will be removed immediately for necropsy and the death recorded in the study notebook.

b. **Clinical Observations:** In addition to the daily survival check(s), daily (7 days/week during the dosing and recovery periods) cageside observations of general appearance, behavior and signs of toxicity will be recorded.

c. **Physical Examinations:** A thorough hand-held physical examination will be performed and recorded on each animal prior to initiation of dosing for use in study animal selection and weekly during the dosing period.

d. **Body Weights:** Each animal will be weighed prior to initiation of dosing, weekly during the dosing period and at the termination of dosing. Recovery animals will be weighed weekly during the 28-day recovery period. A fasted terminal body weight will be taken prior to necropsy.

e. **Food Consumption:** Individual food consumption will be recorded weekly for each animal. Group mean food consumption will be calculated from individual food consumption data.

f. **Clinical Pathology:** Blood samples from the retro-orbital sinus will be collected for hematology and clinical chemistry determinations from all animals after 30 days of dosing and from the Core and Recovery group animals prior to their respectively scheduled necropsy, for a total of three bleed periods. Animals will be fasted for 16-20 hours prior to blood collection.

1. **Hematology:** The following hematology determinations will be made:

Hematocrit (derived)	Mean corpuscular volume
Hemoglobin concentration	Mean corpuscular hemoglobin (derived)
Total erythrocyte count	Mean corpuscular hemoglobin concentration (derived)
Total leukocyte count	Platelet count
Differential leukocyte count	

2. **Serum Chemistry:** The following clinical chemistry determinations will be made to minimally evaluate electrolyte balance, carbohydrate metabolism, liver and kidney function:

Glucose	Potassium
Urea nitrogen (BUN)	Chloride
Alanine aminotransferase	Sodium
Aspartate aminotransferase	Calcium
Alkaline phosphatase	Cholesterol
Albumin	Phosphorus
Total protein	Total bilirubin
Globulin (derived)	Creatinine
Albumin/globulin ratio (derived)	Gamma glutamyl transpeptidase
Creatine kinase	

It is recommended in the testing guidelines (40 CFR 798.2650) that ornithine decarboxylase activity also be determined. However, since there is no generally accepted methodology for measuring ornithine decarboxylase activity, and since determination of the activity of this enzyme is of questionable value, ornithine decarboxylase activity will not be measured.

g. **Urinalysis:** Urinalysis is not recommended unless organ specific toxicity is expected or observed during the study; this endpoint can be added at an additional cost to the Sponsor.

h. **Ophthalmology:** All animals will be observed prior to initiation of dosing and re-examined prior to the scheduled necropsy of the Core animals. If ocular toxicity is observed, then all Recovery animals will be re-examined prior to their scheduled necropsy.

14. Postmortem Procedures

a. **Necropsy:** At the end of the 90-day treatment period, all survivors, except those in the Recovery group, will be necropsied. Necropsies will be conducted over two days, with half the animals being necropsied each day. (The animals necropsied on the second day will receive one additional dose of the test article). All survivors in the Recovery group will be necropsied after a recovery period of at least 28-days. All rats dying spontaneously or sacrificed *in extremis* will be subjected to a gross necropsy. The presence of lesions or other abnormal findings will be noted in the study record.

b. **Tissue Collection & Weights:** The following tissues will be collected from all animals. At a minimum, the lung, liver, kidneys, adrenal glands, brain and testes or ovaries will be trimmed and weighed for each animal surviving the dosing regimen.

All gross lesions	Thymus	Kidneys
Lungs	Trachea	Adrenals
Nasal turbinates	Heart	Pancreas
Brain with medulla/ pons; cerebellum and cortex	Sternum with bone marrow	Testes & *epididymis, *prostate, *seminal vesicles
Pituitary	Salivary glands	Ovaries
Thyroid gland	Liver	Uterus
Parathyroid glands	Spleen	Aorta
*Skin	Colon	*Femur
Esophagus	Rectum	*Spinal cord; three levels
Stomach	Urinary bladder	*Zymbal glands
Duodenum	Mesenteric lymph node	*Exorbital lachrymal glands
Jejunum	*Mammary gland	
Ileum	*Thigh musculature	
Cecum	Peripheral nerve	
	*Eyes	

d. **Tissue Fixation:** All tissue samples will be sliced into appropriate-sized sections if necessary and fixed in 10% neutral buffered formalin.

e. **Histopathology:** Organs and tissues designated with an asterisk (*) will be processed and evaluated microscopically only in the event of signs of toxicity or target organ involvement. All other organs and tissues listed above from the control and high dose groups, as well as the animals that die on-test or are sacrificed *in extremis*, will be processed and examined microscopically by a pathologist.

Target organs (i.e., tissues showing signs of test article-related toxicity at the high dose level) and gross lesions will be examined microscopically in animals of all groups. For the recovery animals, histopathology will be performed only on tissues and organs identified as showing effects in the core animals at the end of the 90-day dosing period.

In addition, the lungs from the low and medium dose group animals will be examined microscopically.

15. Statistical Analysis:

Group means and standard deviations will be calculated for all quantitative parameters. Statistical analysis of continuous data (body weights, food consumption, hematology, clinical chemistry, organ weights) will be performed using analysis of variance (ANOVA), with post-hoc comparisons of significant differences using Dunnett's test. A minimum significance level of $p \leq 0.05$ will be used for all comparisons.

16. Final Test Report

The test report will include, but not necessarily be limited to, the following:

- Abstract or summary of salient results
- Copy of the signed protocol and any amendments
- Statement of compliance
- Test and vehicle control substance characterization
- Mortality, clinical and physical examination results
- Body weight results
- Food consumption results
- Clinical pathology results
- Ophthalmology results
- Gross necropsy results
- Organ weight results (absolute and relative)
- Histopathology results
- Statistical treatment of results

17. Raw Data

All original data (i.e., data generated at IITRI), specimens and a copy of the final report will be kept in the IITRI Archives. There will be only one original signed report which will be submitted to the Sponsor.

18. Study Personnel

Curricula vitae for all personnel involved in the execution of the study are on file at IITRI.

PROTOCOL AMENDMENT

IITRI Project Number: L08512

Study Number: 2

Protocol Amendment Number: 1

Study Title: **90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group**

The following addition is being made to section 9.f. **(Sample Retention & Disposition)**:

The Sponsor will be responsible for retaining reserve samples of the bulk test and vehicle control substances.

This is being added because GLP regulations require that the study protocol for a study of 90 days duration indicates provisions for retaining of reserve samples of the test and control substances.

The following change is being made to section 12.d. **(Test Substance Administration)**:

The phrase "animals will be fasted for 16-20 hours prior to scheduled blood collection and" should be deleted.

This phrase was inadvertently included in this paragraph.

The following change is being made to section 13.f. **(Clinical Pathology)**:

Blood samples from the retro-orbital sinus will be collected for hematology and clinical chemistry determinations from all animals after 30 days on test and from the Core and Recovery group animals prior to their respectively scheduled necropsy, for a total of three bleed periods.

This change is being made because the animals are being dosed 5 days/week and will have only received 22 doses after 30 days of the study.

The following section is being added to the protocol:

17. DATA NOTEBOOKS

All original data will be maintained in loose-leaf notebooks. These will include, but not necessarily be limited to, the following:

1. The original signed protocol and all amendments.
2. Animal purchase and receiving records.

3. Animal care records.
4. Test article preparation and administration data.
5. Analytical chemistry data from dose analyses.
6. Daily morbidity/mortality data.
7. Clinical observation data.
8. Body weight data.
9. Food consumption data.
10. Ophthalmology data.
11. Clinical pathology data.
12. Necropsy, organ weights and histopathology data.

This section is being added because GLP regulations require that the study protocol contain a list of study records to be maintained. Also, because of this addition, sections **17. RAW DATA** and **18. STUDY PERSONNEL** of the protocol become sections **18.** and **19.**, respectively.

APPROVAL:

a. Study Director: William D. Johnson 8-30-94
William D. Johnson, Ph.D. Date

b. Manager of Research: 8/30/94
David L. McCormick, Ph.D. Date

c. Sponsor: 9/7/94
Carol Komin, B.S. Date

PROTOCOL DEVIATION

IITRI Project Number: L08512

Study Number: 2

Protocol Deviation Number: 1

Study Title: 90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group

9.g. **STABILITY & SOLUBILITY**: Stability of the corn oil vehicle was provided by the supplier and was **not** determined by analysis of peroxide content by IITRI. Characterization data provided by the supplier indicated that the corn oil has a shelf-life of one year when stored at room temperature and not in direct (strong) sunlight. The corn oil used in this study was received on June 13, 1994 and the last day of dosing for the study was November 29, 1994. Thus, the corn oil was stable for the duration of dosing and this deviation, therefore, did not affect the integrity of the study.

Study Director: William D. Johnson 12/2/94

William D. Johnson, Ph.D. Date

PROTOCOL DEVIATION

IITRI Project Number: L08512

Study Number: 2

Protocol Deviation Number: 2

Study Title: 90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group

14.e **HISTOPATHOLOGY**: The protocol states that all animals which die on-test will be processed and examined microscopically. However, tissues from one mid dose (200 mg/kg/day) male rat (animal #41) which died as a result of a dosing error on Day 30 of the study were not processed and examined.* Enlarged lungs were observed grossly in this animal at necropsy, which confirmed the gavage error (*i.e.*, direct deposition of the test article solution into the lungs). Since this was an accidental death which occurred within the first month of the study, and since no treatment-related microscopic lesions were seen in any animal at the termination of dosing, not subjecting this animal to complete ** histopathological evaluation did not affect the integrity of the study.

Study Director: William D. Johnson 2/22/95

William D. Johnson, Ph.D. Date

* except for the lungs which were processed and examined as required by the protocol

added by W. Johnson on 4-28-95 for clarification

** added by W. Johnson on 4-28-95 for clarification

PROTOCOL DEVIATION

IITRI Project Number: L08512

Study Number: 2

Protocol Deviation Number: 3

Study Title: 90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group

13.a. **Survival Checks:** The protocol states that all rats will be observed for moribundity and mortality twice daily on weekdays and once daily on weekends and holidays during the study. However, on study days (weekdays) 10(9/8/94), 37(10/5/94) and 66(10/[illegible]/94) animals were observed only once, while on study days (weekends) 33(10/1/94), 47(10/15/94) and 61(10/29/94) animals were observed twice. These deviations did not affect the integrity of the study.

Study Director: William D. Johnson 4-12-95

William D. Johnson, Ph.D. Date

APPENDIX 2

ANALYTICAL CHEMISTRY REPORT

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 2

Analytical Chemistry Report

CHARACTERIZATION OF THE BULK TEST SUBSTANCE

IDENTITY

Identity of the bulk test substance was confirmed using infrared spectroscopy (IR). A sample of the neat liquid material was placed between salt (NaCl) plates and an IR spectrum was obtained. The instrument parameters were:

Instrument:	Perkin Elmer Model 783
Slit Width:	3 nm
Multiplier:	1.5
Wavelengths:	4000 cm^{-1} to 200 cm^{-1}

The resulting IR spectrum was compared to spectra in a reference handbook (Sadtler Handbook of Infrared Spectra, 1978, p. 73). The measured test substance spectrum agreed with the listed spectrum for 1,3,5-trimethylbenzene, thus confirming the identity.

PURITY

The purity of the bulk test substance was determined using gas chromatography (GC). A sample of the neat liquid was injected into the GC which was operated using the following parameters:

Instrument:	Varian 3700
Column:	Petrocol DH50.2 (Supelco), 50 m x 0.2 mm ID; 0.5 micron
Carrier Gas:	Helium, 50 PSI
Injector:	Split, 220 °C
Detector:	FID at 250 °C
Injection Volume:	0.1 microliter
Column Temperature:	100 °C for 5 minutes then 10°C/min to 220 °C and hold for 10 minutes

The measured purity of the bulk test substance using these conditions was 99.2%.

COMPOSITION

From the purity determination by GC, only one compound other than 1,3,5-trimethylbenzene was present at greater than 0.5 percent. This was identified (based on information supplied by the sponsor) as pseudocumene, which was analyzed by IITRI at 0.699%. These two compounds account for 99.9% of the test substance.

STABILITY

The stability of the bulk test substance under laboratory conditions was determined by reanalysis for composition and purity following completion of the treatment phase of the study. The measured purity was 99.3%; with 0.688 % pseudocumene. This compared favorably to the composition and purity determinations made prior to the study. Therefore, the test substance was stable for the duration of the study when stored under laboratory conditions.

CORN OIL ANALYSIS

Characterization of the corn oil was provided by the supplier. The peroxide level was 0.5 mEq/kg. Information supplied by the supplier indicated that the corn oil was stable for one year when stored at room temperature out of direct sunlight.

FORMULATED TEST SUBSTANCE ANALYSIS

DESCRIPTION

The formulated test substance in the corn oil vehicle was described as appearing as a solution with apparent complete solubility. Therefore, dosing preparations will be referred to as solutions.

ANALYSIS OF 1,3,5-TRIMETHYLBENZENE IN CORN OIL

The method of analysis for 1,3,5-trimethylbenzene in corn oil was developed at IIT Research Institute.

Accurately measured corn oil samples were placed in glass graduated containers. An internal standard solution (5 ml of nonane in 500 ml of hexane) was added *q.s.* to 4 ml. A one microliter aliquot was injected into the GC and the peak area ratio (1,3,5-trimethylbenzene to internal standard) was determined. This peak area ratio was compared to a standard curve in order to calculate the amount of 1,3,5-trimethylbenzene in the sample.

The GC was operated using the following parameters:

Instrument:	Varian 3700
Column:	5 % SP-2100, 1.75 % Bentone 34 on 100/120 mesh Supelcoport, 6 foot by 1/8 inch
Carrier Gas:	Nitrogen, 22 cc/min
Injector:	220 °C
Detector:	FID at 250 °C
Injection Volume:	1 microliter
Column Temperature:	120 °C
Range:	10^{-9}

LINEARITY

The linearity of GC response was determined using standard solutions ranging in concentration from 4.506 to 75.10 mg/ml, which would theoretically bracket the concentrations in the corn oil samples. Four standards covering this range were analyzed. A linear response was obtained, with a correlation of 0.99985. To insure accuracy throughout the calibration range, a second order function was fit through the calibration data. During the study, a previously prepared standard was analyzed with each batch of samples to show that the standard curve was still valid.

RESULTS

Homogeneity of the dosing solution was measured by collecting and analyzing duplicate samples at the top, middle and bottom of the volumetric flask. Homogeneity results for each dose preparation are shown in Analytical Chemistry Table 1. All preparations were determined to be homogeneous, with less than 10 percent relative standard deviation between the sample locations. The analyzed concentration for each individual sample was within 10% of the mean concentration for both preparations at all three concentration levels.

Stability data on preparations stored at room temperature are shown in Analytical Chemistry Table 2. The low and high concentration preparations of 1,3,5-trimethylbenzene in corn oil were found to be stable for at least 14 days at room temperature.

Corn oil preparations were analyzed for 1,3,5-trimethylbenzene concentration according to the procedures previously described. Analytical Chemistry Table 3 shows the concentrations obtained for each analyzed dose level. The overall mean analyzed concentration was 98.9% of the target concentration for the 10 mg/ml concentration level, 96.9% for the 40 mg/ml concentration level, and 100.8% for the 120 mg/ml concentration level. All individual sample concentrations were within 10% of the target concentrations. No test substance was detected in any vehicle control sample.

Scott Garthwaite 5-9-95

Scott Garthwaite, B.S. Date
Analytical Chemist

APPENDIX 2 (cont.)

Analytical Chemistry Table 1

Analysis of 1,3,5-Trimethylbenzene in Corn Oil for Homogeneity

Target Concentration	Sample Location	Replicate	Analyzed Concentration (mg/ml)[a] Week 1	Week 2
10 mg/ml (low dose; 50 mg/kg)	Top	1	9.67	9.96
		2	9.57	10.00
	Middle	1	10.20	10.17
		2	9.45	9.72
	Bottom	1	9.93	9.76
		2	9.84	9.93
			Mean = 9.78	**Mean = 9.92**
			S.D.[b] = 0.271	**S.D. = 0.165**
			RSD[c] = 2.77	**RSD = 1.66**
40 mg/ml (mid dose; 200 mg/kg)	Top	1	37.84	37.42
		2	38.46	39.80
	Middle	1	39.31	37.19
		2	39.32	37.72
	Bottom	1	41.32	38.95
		2	38.15	39.60
			Mean = 39.07	**Mean = 38.45**
			S.D. = 1.258	**S.D. = 1.147**
			RSD = 3.22	**RSD = 2.98**
120 mg/ml (high dose; 600 mg/kg)	Top	1	121.3	118.6
		2	121.5	119.0
	Middle	1	117.9	121.3
		2	113.5	123.5
	Bottom	1	116.6	125.5
		2	131.3	121.5
			Mean = 120.4	**Mean = 121.6**
			S.D. = 6.15	**S.D. = 2.63**
			RSD = 5.11	**RSD = 2.16**

[a] Values represent a single analysis for each replicate.
[b] SD = Standard Deviation
[c] RSD = Relative Standard Deviation (SD ÷ Mean x 100%)

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 2 (cont.)

Analytical Chemistry Table 2

1,3,5-Trimethylbenzene in Corn Oil Stability Analysis

Storage Condition	Target Concentration (mg/ml)	Analyzed Concentration (mg/ml)[a]						
		Day 0	Day 1	Percent Change	Day 7	Percent Change	Day 14	Percent Change
room temperature	10[b]	9.78	9.98	+2.0	10.07	+3.0	9.85	+0.7
	120[c]	120.4	120.5	+0.1	122.3	+1.6	123.1	+2.2

[a] values represent a single analysis, except for Day 0 in which the values are a mean of 6 analyses
[b] low dose (50 mg/kg)
[c] high dose (600 mg/kg)

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 2 (cont.)

Analytical Chemistry Table 3

Analysis of 1,3,5-Trimethylbenzene in Corn Oil

Target Concentration (mg/ml)	Analyzed Concentration (mg/ml)										Percent of Target
	Week 1[a]	Week 2[a]	Week 3[b]	Week 4[b]	Week 5[b]	Week 7[b]	Week 9[b]	Week 11[b]	Week 13[b]	Mean	
0	BDL[c]	BDL	--[g]							BDL	--
10[d]	9.78	9.92	9.81	9.62	10.25	9.60	10.23	9.92	9.92	9.89	98.9
40[e]	39.07	38.45	--[g]							38.76	96.9
120[f]	120.4	121.6	119.4	123.6	120.1	128.2	120.7	119.7	114.6	120.9	100.8

[a] Values are means of duplicate analyses for 0 mg/ml and 6 replicates for 10, 40, and 120 mg/ml.
[b] Values are means of duplicate analyses.
[c] BDL = below detection limit
[d] Low dose (50 mg/kg)
[e] Mid dose (200 mg/kg)
[f] High dose (600 mg/kg)
[g] Beginning Week 3, no analyses were required for 0 mg/ml and 40 mg/ml.

APPENDIX 3

OPHTHALMOLOGY REPORT

ANIMAL EYE ASSOCIATES

2645 SOUTH HARLEM • BERWYN, ILLINOIS 60402 • (708)749-4200
372 SOUTH MILWAUKEE AVE. • WHEELING, ILLINOIS 60090 • (708) 215-3933

SAMUEL J. VAINISI, DVM
Diplomate American College
of Veterinary Ophthalmologists

GRETCHEN M. SCHMIDT, DVM
Diplomate American College
of Veterinary Ophthalmologists

Study LO8512/SN2

There were no significant ophthalmic findings in this study. The cataracts seen in the left eyes of test animals 32 and 59 were not considered to be associated with the test article.

Gretchen M Schmidt DVM

Gretchen M. Schmidt D.V.M.

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
0 mg/kg/day Vehicle Control	1	Redness Around Nose Fur	Day 1	Day 10	2
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 2	Day 92	90
	2	Redness Around Nose Fur	Day 1	Day 38	4
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 2	Day 92	88
	3	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	4	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	5	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	6	Redness Around Nose Fur	Day 10	Day 10	1
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	92
	7	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	8	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	9	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	10	Redness around eyes	Day 68	Day 68	1
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	92

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
50 mg/kg/day Low	21	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	22	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	23	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	24	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	25	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	26	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	27	Redness Around Nose Fur	Day 11	Day 17	5
		Discolored Inguinal Fur	Day 11	Day 11	1
		Rough Hair Coat	Day 12	Day 12	1
		Mass	Day 17	Day 84	68
		Scab	Day 85	Day 93	9
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 16	12
	28	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	29	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	30	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
200 mg/kg/day Mid	41	Redness Around Nose Fur	Day 29	Day 29	1
		Accidental Death	Day 30	Day 30	1
		Normal	Day 1	Day 28	28
	42	Redness Around Nose Fur	Day 10	Day 84	4
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	88
	43	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	44	Alopecia	Day 79	Day 92	5
		Scab	Day 89	Day 92	4
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 88	87
	45	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	46	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	47	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	48	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	49	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	50	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High	61	Redness Around Nose Fur	Day 2	Day 2	1
		Discolored Inguinal Fur	Day 44	Day 92	29
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 91	62
	62	Discolored Inguinal Fur	Day 68	Day 89	7
		Wet Inguinal Fur	Day 74	Day 75	2
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	84
	63	Discolored Inguinal Fur	Day 74	Day 74	1
		Wet Inguinal Fur	Day 74	Day 74	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	64	Redness Around Nose Fur	Day 3	Day 3	1
		Discolored Inguinal Fur	Day 58	Day 89	11
		Wet Inguinal Fur	Day 74	Day 75	2
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	80
	65	Redness Around Nose Fur	Day 38	Day 38	1
		Discolored Inguinal Fur	Day 25	Day 92	32
		Wet Inguinal Fur	Day 10	Day 10	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 90	58
	66	Discolored Inguinal Fur	Day 74	Day 88	4
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	89
	67	Redness Around Nose Fur	Day 30	Day 35	2
		Salivation	Day 37	Day 37	1
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	90

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High	68	Redness Around Nose Fur	Day 50	Day 50	1
		Discolored Inguinal Fur	Day 11	Day 88	3
		Wet Inguinal Fur	Day 10	Day 10	1
		Redness Around Eyes	Day 50	Day 68	2
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	87
	69	Discolored Inguinal Fur	Day 72	Day 93	3
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 92	90
	70	Discolored Inguinal Fur	Day 72	Day 89	5
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	88

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High Recovery	81	Redness Around Nose Fur	Day 74	Day 74	1
		Discolored Inguinal Fur	Day 72	Day 89	9
		Salivation	Day 71	Day 71	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	110
	82	Discolored Inguinal Fur	Day 80	Day 80	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	119
	83	Redness Around Nose Fur	Day 26	Day 26	1
		Discolored Inguinal Fur	Day 86	Day 89	3
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	116
	84	Discolored Inguinal Fur	Day 86	Day 86	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	119
	85	Redness Around Nose Fur	Day 24	Day 24	1
		Discolored Inguinal Fur	Day 73	Day 89	11
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	108
	86	Discolored Inguinal Fur	Day 74	Day 88	4
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	116
	87	Discoloration Around Mouth	Day 72	Day 73	2
		Redness Around Nose Fur	Day 69	Day 73	3
		Discolored Inguinal Fur	Day 12	Day 89	19
		Wet Inguinal Fur	Day 74	Day 75	2
		Alopecia	Day 85	Day 100	16
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	89

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Males

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High Recovery	88	Discolored Inguinal Fur	Day 58	Day 89	5
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	115
	89	Salivation	Day 25	Day 25	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	119
	90	Redness Around Nose Fur	Day 3	Day 78	3
		Discolored Inguinal Fur	Day 72	Day 89	8
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	109

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
0 mg/kg/day Vehicle Control	11	Redness Around Nose Fur	Day 68	Day 68	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	12	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	13	Redness Around Nose Fur	Day 26	Day 26	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	14	Swollen Limb	Day 92	Day 92	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 91	91
	15	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	16	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	17	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	18	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	19	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	20	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
50 mg/kg/day Low	31	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	32	Redness Around Nose Fur	Day 48	Day 48	1
		Ocular Opacity	Day 68	Day 92	25
		Left Eye Dark Red	Day 48	Day 65	18
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 67	49
	33	Redness Around Eyes	Day 79	Day 79	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	34	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	35	Redness Around Nose Fur	Day 68	Day 68	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	36	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	37	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	38	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	39	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	40	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
200 mg/kg/day Mid	51	Wet Inguinal Fur	Day 72	Day 78	3
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	89
	52	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	53	Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	92
	54	Alopecia	Day 90	Day 92	3
		Salivation	Day 29	Day 29	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 89	88
	55	Redness Around Nose Fur	Day 1	Day 1	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 2	Day 92	91
	56	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	57	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	58	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	59	Redness Around Nose Fur	Day 39	Day 39	1
		Ocular Opacity	Day 74	Day 93	19
		Left Eye Dark Red	Day 48	Day 75	18
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 73	55
	60	Redness Around Nose Fur	Day 38	Day 38	1
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	92

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High	799	Discolored Inguinal Fur	Day 68	Day 89	9
		Accidental Death	Day 3	Day 3	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	82
	72	Redness Around Nose Fur	Day 39	Day 39	1
		Tooth Loss	Day 86	Day 92	7
		Salivation	Day 24	Day 72	3
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 85	81
	73	Discolored Inguinal Fur	Day 79	Day 79	1
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 92	91
	74	Discolored Inguinal Fur	Day 8	Day 92	12
		Wet Inguinal Fur	Day 22	Day 22	1
		Salivation	Day 22	Day 78	7
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 91	74
	75	Discolored Inguinal Fur	Day 68	Day 92	16
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 83	76
	76	Alopecia	Day 68	Day 93	26
		Salivation	Day 43	Day 71	2
		Terminal Sacrifice	Day 92	Day 92	1
		Normal	Day 1	Day 67	66
	77	Wet Inguinal Fur	Day 93	Day 93	1
		Salivation	Day 24	Day 24	1
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 92	91

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High	78	Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	93
	79	Redness Around Nose Fur	Day 50	Day 55	2
		Discolored Inguinal Fur	Day 58	Day 93	26
		Wet Inguinal Fur	Day 50	Day 74	4
		Salivation	Day 22	Day 71	2
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 85	63
	80	Red Nasal Discharge	Day 11	Day 11	1
		Salivation	Day 25	Day 43	5
		Terminal Sacrifice	Day 93	Day 93	1
		Normal	Day 1	Day 93	87

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High Recovery	91	Redness Around Nose Fur	Day 30	Day 35	2
		Discolored Inguinal Fur	Day 58	Day 94	23
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	95
	92	Discolored Inguinal Fur	Day 89	Day 89	1
		Wet Inguinal Fur	Day 37	Day 37	1
		Salivation	Day 24	Day 24	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	117
	93	Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	120
	94	Discolored Inguinal Fur	Day 72	Day 90	9
		Wet Inguinal Fur	Day 50	Day 50	1
		Salivation	Day 24	Day 24	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	109
	95	Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	120
	96	Redness Around Nose Fur	Day 57	Day 57	1
		Discolored Inguinal Fur	Day 33	Day 89	13
		Wet Inguinal Fur	Day 50	Day 50	1
		Salivation	Day 9	Day 80	12
		Redness Around Eyes	Day 68	Day 68	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	94
	97	Discolored Inguinal Fur	Day 74	Day 74	1
		Salivation	Day 24	Day 24	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	118

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 4 (cont.)

Individual Clinical Observations - Females

Treatment	Animal Number	Observations	Onset	Duration	Frequency
600 mg/kg/day High Recovery	98	Discolored Inguinal Fur	Day 71	Day 74	3
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	117
	99	Redness Around Nose Fur	Day 38	Day 82	3
		Discolored Inguinal Fur	Day 36	Day 89	10
		Salivation	Day 18	Day 38	6
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	102
	100	Discolored Inguinal Fur	Day 72	Day 89	10
		Salivation	Day 30	Day 30	1
		Terminal Sacrifice	Day 120	Day 120	1
		Normal	Day 1	Day 120	109

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 5

Individual Weekly Body Weights (g) - Males

Treatment	Number	Day 0	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	1	263	321	374	418	456	475	512	543	563	580	589	604	629	648
	2	246	302	361	411	448	476	498	519	536	546	560	571	597	620
	3	255	309	356	397	401	427	456	472	493	511	532	539	557	569
	4	240	295	341	398	435	459	485	515	543	561	583	591	603	621
0 mg/kg/day	5	268	325	369	422	459	486	505	538	552	574	577	607	625	640
Vehicle	6	248	312	377	424	472	489	535	567	591	608	612	641	668	693
Control	7	249	300	344	385	411	433	459	472	497	507	514	532	552	566
	8	269	331	380	408	456	480	507	522	542	556	571	579	591	599
	9	258	311	356	391	425	440	469	489	513	521	536	550	570	583
	10	250	315	376	418	469	482	519	563	595	612	635	655	685	705
	21	250	310	361	420	465	488	512	544	567	590	603	611	635	642
	22	255	308	358	406	436	453	483	500	527	532	535	548	549	568
	23	248	303	352	402	435	456	475	504	523	546	555	567	575	588
	24	246	306	367	421	463	486	523	558	579	604	625	637	666	683
50 mg/kg/day	25	241	299	348	389	422	446	473	496	519	532	547	558	579	588
Low	26	250	302	348	382	407	422	449	467	494	510	523	531	548	564
	27	267	325	333	381	424	454	491	521	536	549	560	565	570	586
	28	259	313	363	401	438	455	486	509	523	531	537	548	561	567
	29	278	349	420	469	519	542	582	613	637	665	682	697	719	740
	30	263	310	361	396	423	433	456	481	497	498	509	522	539	546
	41	252	308	366	411	453	--[a]	--	--	--	--	--	--	--	--
	42	249	311	364	409	449	468	513	536	578	599	618	639	663	672
	43	243	290	332	368	395	417	444	468	491	504	517	529	540	555
	44	268	327	381	429	463	490	519	539	559	568	586	599	618	632
200 mg/kg/day	45	259	312	358	397	426	455	481	500	515	539	550	565	577	588
Mid	46	253	302	346	388	422	442	473	497	523	545	558	567	591	603
	47	248	303	353	382	415	432	458	489	511	529	548	553	567	581
	48	262	322	370	416	447	465	490	511	528	537	552	561	572	586
	49	245	282	328	357	396	425	439	462	466	492	511	516	533	555
	50	273	333	386	431	462	488	511	538	560	583	595	614	633	649

[a]-- = accidental death; no data

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 5 (cont.)

Individual Weekly Body Weights (g) - Males

Treatment	Number	Day 0	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	61	256	310	351	392	425	438	465	481	492	507	522	538	553	570
	62	245	293	331	360	393	411	437	462	485	500	514	540	558	575
	63	242	290	335	375	409	418	445	470	482	491	508	523	542	551
	64	271	334	383	433	473	490	523	559	578	602	627	654	680	695
600 mg/kg/day	65	254	316	368	410	448	466	493	522	548	525	576	606	626	639
High	66	248	307	348	392	421	424	452	473	484	517	525	533	538	554
	67	249	297	328	365	387	401	420	440	456	466	481	496	503	518
	68	251	304	347	389	421	435	461	464	494	507	525	540	555	562
	69	262	317	367	416	454	472	504	523	550	572	576	592	627	648
	70	267	320	371	407	452	464	491	509	519	537	560	582	602	625
	81	251	308	353	395	423	431	450	482	497	514	526	537	548	553
	82	235	281	313	333	351	360	370	389	401	413	428	439	448	447
	83	249	288	332	360	390	406	437	454	472	506	525	530	548	562
	84	255	309	349	387	419	425	453	469	485	504	521	521	532	546
600 mg/kg/day	85	269	331	393	442	486	515	530	579	589	610	646	666	682	702
High	86	262	315	355	400	431	444	471	494	514	534	549	553	570	584
Recovery	87	261	328	379	430	468	489	520	544	566	606	629	637	656	673
	88	247	300	344	377	406	419	444	464	483	492	502	510	518	523
	89	269	328	381	434	471	487	519	554	575	605	631	629	639	652
	90	248	291	334	360	390	397	421	443	470	480	491	504	512	523

APPENDIX 5 (cont.)

Individual Weekly Body Weights (g) - Females

Treatment	Number	Day 0	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	11	206	230	261	288	299	304	314	327	334	349	354	355	369	375
	12	212	230	257	272	287	285	297	300	308	308	320	322	334	328
	13	199	219	236	243	261	267	281	287	292	296	298	296	309	319
	14	196	215	230	252	266	282	296	311	321	337	343	342	363	357
0 mg/kg/day	15	161	203	219	232	241	249	254	260	266	266	267	281	279	284
Vehicle	16	192	223	241	247	265	270	280	289	298	297	301	319	322	324
Control	17	208	236	252	264	287	292	301	306	310	308	311	326	318	326
	18	187	225	238	248	276	281	294	297	303	311	318	320	322	327
	19	209	214	235	242	262	273	280	270	289	289	302	308	308	314
	20	193	217	237	256	264	271	282	291	290	296	302	304	308	312
	31	197	204	235	270	275	299	299	308	314	309	321	333	325	339
	32	205	220	238	257	268	266	278	293	293	298	300	305	313	307
	33	208	229	245	259	270	279	285	295	298	302	304	311	307	314
	34	181	187	220	225	258	257	274	282	284	299	299	309	315	319
50 mg/kg/day	35	187	209	210	240	238	255	256	271	273	292	281	289	294	295
Low	36	211	237	259	284	304	312	311	337	352	354	359	373	382	390
	37	189	218	241	259	274	280	297	302	313	310	327	339	334	337
	38	195	210	231	251	262	268	278	285	288	288	290	297	300	296
	39	200	225	243	257	264	280	291	293	307	316	319	324	336	342
	40	216	245	269	281	312	321	327	340	335	361	375	381	386	406
	51	213	248	274	286	294	311	328	335	337	347	354	356	371	381
	52	193	227	240	267	280	288	305	304	313	320	320	319	333	338
	53	184	203	224	242	248	270	273	285	293	293	306	315	323	321
	54	209	241	269	292	293	318	321	329	340	341	340	351	363	354
200 mg/kg/day	55	205	227	244	260	274	290	290	297	308	311	311	315	314	328
Mid	56	199	215	236	254	259	260	272	278	289	289	298	306	314	312
	57	209	232	250	264	278	287	299	308	319	325	333	336	339	345
	58	187	214	234	266	289	275	286	294	299	301	308	317	316	322
	59	190	211	221	247	245	259	262	272	273	278	287	294	306	315
	60	197	217	234	255	264	272	281	290	294	299	298	308	318	323

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 5 (cont.)

Individual Weekly Body Weights (g) - Females

Treatment	Number	Day 0	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	799	196	219	239	255	264	276	296	294	308	315	323	313	325	329
	72	218	230	251	262	276	278	293	290	300	298	309	318	320	334
	73	200	226	238	257	274	278	283	294	300	312	313	318	328	328
	74	208	217	239	260	274	271	292	302	312	305	320	328	334	331
600 mg/kg/day	75	192	208	231	250	257	269	281	292	298	305	309	320	321	324
High	76	187	199	207	219	231	233	240	241	248	254	256	257	257	264
	77	184	204	213	226	235	244	255	262	267	265	271	278	284	286
	78	205	240	267	290	292	311	322	328	343	341	348	355	356	363
	79	211	222	256	276	293	288	314	326	334	332	340	355	362	358
	80	195	223	244	262	260	272	275	291	299	303	307	343	358	339
	91	204	236	259	273	281	296	309	321	318	331	341	342	346	351
	92	188	203	221	246	257	260	271	278	281	284	292	298	304	300
	93	183	199	210	230	231	241	247	252	255	262	266	274	272	274
	94	213	247	264	279	292	292	306	324	327	325	335	337	351	347
600 mg/kg/day	95	195	221	239	253	274	267	285	295	295	316	323	325	341	352
High	96	207	242	262	265	279	287	288	302	313	320	318	330	333	335
Recovery	97	205	225	256	271	288	291	308	324	331	338	343	346	345	352
	98	211	243	256	271	292	291	315	323	336	339	343	351	361	373
	99	193	212	237	260	274	272	292	306	311	311	319	321	328	340
	100	189	205	226	225	246	262	269	270	286	287	296	289	303	312

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APPENDIX 6

Individual Weekly Body Weights (g)
Recovery - Males

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119
	81	562	573	588	599
	82	453	465	485	499
	83	564	577	608	611
600 mg/kg/day	84	549	559	571	579
High	85	706	717	732	747
	86	592	600	617	615
	87	687	708	735	745
	88	539	547	548	562
	89	656	666	681	691
	90	525	539	550	563

Recovery - Females

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119
	91	350	357	375	389
	92	306	308	311	310
	93	281	294	303	310
600 mg/kg/day	94	352	359	367	372
High	95	337	352	350	351
	96	336	348	347	346
	97	366	376	410	425
	98	371	378	377	379
	99	337	339	345	345
	100	345	330	329	325

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 7

Individual Weekly and Cumulative Body Weight Gains (g) - Males

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91	Total Gain
	1	58	53	44	38	19	37	31	20	17	9	15	25	19	385
	2	56	59	50	37	28	22	21	17	10	14	11	26	23	374
	3	54	47	41	4	26	29	16	21	18	21	7	18	12	314
	4	55	46	57	37	24	26	30	28	18	22	8	12	18	381
0 mg/kg/day	5	57	44	53	37	27	19	33	14	22	3	30	18	15	372
Vehicle	6	64	65	47	48	17	46	32	24	17	4	29	27	25	445
Control	7	51	44	41	26	22	26	13	25	10	7	18	20	14	317
	8	62	49	28	48	24	27	15	20	14	15	8	12	8	330
	9	53	45	35	34	15	29	20	24	8	15	14	20	13	325
	10	65	61	42	51	13	37	44	32	17	23	20	30	20	455
	21	60	51	59	45	23	24	32	23	23	13	8	24	7	392
	22	53	50	48	30	17	30	17	27	5	3	13	1	19	313
	23	55	49	50	33	21	19	29	19	23	9	12	8	13	340
	24	60	61	54	42	23	37	35	21	25	21	12	29	17	437
50 mg/kg/day	25	58	49	41	33	24	27	23	23	13	15	11	21	9	347
Low	26	52	46	34	25	15	27	18	27	16	13	8	17	16	314
	27	58	8	48	43	30	37	30	15	13	11	5	5	16	319
	28	54	50	38	37	17	31	23	14	8	6	11	13	6	308
	29	71	71	49	50	23	40	31	24	28	17	15	22	21	462
	30	47	51	35	27	10	23	25	16	1	11	13	17	7	283
	41	56	58	45	42	--[a]	--	--	--	--	--	--	--	--	--
	42	62	53	45	40	19	45	23	42	21	19	21	24	9	423
	43	47	42	36	27	22	27	24	23	13	13	12	11	15	312
	44	59	54	48	34	27	29	20	20	9	18	13	19	14	364
200 mg/kg/day	45	53	46	39	29	29	26	19	15	24	11	15	12	11	329
Mid	46	49	44	42	34	20	31	24	26	22	13	9	24	12	350
	47	55	50	29	33	17	26	31	22	18	19	5	14	14	333
	48	60	48	46	31	18	25	21	17	9	15	9	11	14	324
	49	37	46	29	39	29	14	23	4	26	19	5	17	22	310
	50	60	53	45	31	26	23	27	22	23	12	19	19	16	376

[a]-- = accidental death; no data

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 7 (cont.)

Individual Weekly and Cumulative Body Weight Gains (g) - Males

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91	Total Gain
	61	54	41	41	33	13	27	16	11	15	15	16	15	17	314
	62	48	38	29	33	18	26	25	23	15	14	26	18	17	330
	63	48	45	40	34	9	27	25	12	9	17	15	19	9	309
	64	63	49	50	40	17	33	36	19	24	25	27	26	15	424
600 mg/kg/day	65	52	52	42	38	18	27	29	26	-23	51	30	20	13	375
High	66	59	41	44	29	3	28	21	11	33	8	8	5	16	306
	67	48	31	37	22	14	19	20	16	10	15	15	7	15	269
	68	53	43	42	32	14	26	3	30	13	18	15	15	7	311
	69	55	50	49	38	18	32	19	27	22	4	16	35	21	386
	70	53	51	36	45	12	27	18	10	18	23	22	20	23	358
	81	57	45	42	28	8	19	32	15	17	12	11	11	5	302
	82	46	32	20	18	9	10	19	12	12	15	11	9	-1	212
	83	39	44	28	30	16	31	17	18	34	19	5	18	14	313
	84	54	40	38	32	6	28	16	16	19	17	0	11	14	291
600 mg/kg/day	85	62	62	49	44	29	15	49	10	21	36	20	16	20	433
High	86	53	40	45	31	13	27	23	20	20	15	4	17	14	322
Recovery	87	67	51	51	38	21	31	24	22	40	23	8	19	17	412
	88	53	44	33	29	13	25	20	19	9	10	8	8	5	276
	89	59	53	53	37	16	32	35	21	30	26	-2	10	13	383
	90	43	43	26	30	7	24	22	27	10	11	13	8	11	275

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APPENDIX 7 (cont.)

Individual Weekly and Cumulative Body Weight Gains (g) - Females

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91	Total Gain
	11	24	31	27	11	5	10	13	7	15	5	1	14	6	169
	12	18	27	15	15	-2	12	3	8	0	12	2	12	-6	116
	13	20	17	7	18	6	14	6	5	4	2	-2	13	10	120
	14	19	15	22	14	16	14	15	10	16	6	-1	21	-6	161
0 mg/kg/day	15	22	16	13	9	8	5	6	6	0	1	14	-2	5	103
Vehicle	16	31	18	6	18	5	10	9	9	-1	4	18	3	2	132
Control	17	28	16	12	23	5	9	5	4	-2	3	15	-8	8	118
	18	38	13	10	28	5	13	3	6	8	7	2	2	5	140
	19	5	21	7	20	11	7	-10	19	0	13	6	0	6	105
	20	24	20	19	8	7	11	9	-1	6	6	2	4	4	119
	31	7	51	15	5	24	0	9	6	-5	12	12	-8	14	142
	32	15	18	19	11	-2	12	15	0	5	2	5	8	-6	102
	33	21	16	14	11	9	6	10	3	4	2	7	-4	7	106
	34	6	33	5	33	-1	17	8	2	15	0	10	6	4	138
50 mg/kg/day	35	22	1	30	-2	17	1	15	2	19	-11	8	5	1	108
Low	36	26	22	25	20	8	-1	26	15	2	5	14	9	8	179
	37	29	23	18	15	6	17	5	11	-3	17	12	-5	3	148
	38	15	21	20	11	6	10	7	3	0	2	7	3	-4	101
	39	25	18	14	7	16	11	2	14	9	3	5	12	6	142
	40	29	24	12	31	9	6	13	-5	26	14	6	5	20	190
	51	35	26	12	8	17	17	7	2	10	7	2	15	10	168
	52	34	13	27	13	8	17	-1	9	7	0	-1	14	5	145
	53	19	21	18	6	22	3	12	8	0	13	9	8	-2	137
	54	32	28	23	1	25	3	8	11	1	-1	11	12	-9	145
200 mg/kg/day	55	22	17	16	14	16	0	7	11	3	0	4	-1	14	123
Mid	56	16	21	18	5	1	12	6	11	0	9	8	8	-2	113
	57	23	18	14	14	9	12	9	11	6	8	3	3	6	136
	58	27	20	32	23	-14	11	8	5	2	7	9	-1	6	135
	59	21	10	26	-2	14	3	10	1	5	9	7	12	9	125
	60	20	17	21	9	8	9	9	4	5	-1	10	10	5	126

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APPENDIX 7 (cont.)

Individual Weekly and Cumulative Body Weight Gains (g) - Females

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91	Total Gain
	799	23	20	16	9	12	20	-2	14	7	8	-10	12	4	133
	72	12	21	11	14	2	15	-3	10	-2	11	9	2	14	116
	73	26	12	19	17	4	5	11	6	12	1	5	10	0	128
	74	9	22	21	14	-3	21	10	10	-7	15	8	6	-3	123
600 mg/kg/day	75	16	23	19	7	12	12	11	6	7	4	11	1	3	132
High	76	12	8	12	12	2	7	1	7	6	2	1	0	7	77
	77	20	9	13	9	9	11	7	5	-2	6	7	6	2	102
	78	35	27	23	2	19	11	6	15	-2	7	7	1	7	158
	79	11	34	20	17	-5	26	12	8	-2	8	15	7	-4	147
	80	28	21	18	-2	12	3	16	8	4	4	36	15	-19	144
	91	32	23	14	8	15	13	12	-3	13	10	1	4	5	147
	92	15	18	25	11	3	11	7	3	3	8	6	6	-4	112
	93	16	11	20	1	10	6	5	3	7	4	8	-2	2	91
	94	34	17	15	13	0	14	18	3	-2	10	2	14	-4	134
600 mg/kg/day	95	26	18	14	21	-7	18	10	0	21	7	2	16	11	157
High	96	35	20	3	14	8	1	14	11	7	-2	12	3	2	128
Recovery	97	20	31	15	17	3	17	16	7	7	5	3	-1	7	147
	98	32	13	15	21	-1	24	8	13	3	4	8	10	12	162
	99	14	25	23	14	-2	20	14	5	0	8	2	7	12	142
	100	16	21	-1	21	16	7	1	16	1	9	-7	14	9	123

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APPENDIX 8

Individual Weekly and Cumulative Body Weight Gains (g)
Recovery - Males

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119	Gain
	81	9	11	15	11	348
	82	6	12	20	14	264
	83	2	13	31	3	362
600 mg/kg/day	84	3	10	12	8	324
High	85	4	11	15	15	478
	86	8	8	17	-2	353
	87	14	21	27	10	484
	88	16	8	1	14	315
	89	4	10	15	10	422
	90	2	14	11	13	315

Recovery - Females

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119	Gain
	91	-1	7	18	14	185
	92	6	2	3	-1	122
	93	7	13	9	7	127
600 mg/kg/day	94	5	7	8	5	159
High	95	-15	15	-2	1	156
	96	1	12	-1	-1	139
	97	14	10	34	15	220
	98	-2	7	-1	2	168
	99	-3	2	6	0	147
	100	33	-15	-1	-4	136

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 9

Individual Weekly Food Consumption (g) - Males

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	1	181	131	175	184	162	176	182	182	164	158	162	174	165
	2	185	180	185	163	178	175	169	172	168	155	165	170	170
	3	194	190	193	160	159	183	164	172	173	179	164	164	161
	4	180	168	184	186	175	180	179	177	171	179	163	159	165
0 mg/kg/day	5	184	199	189	185	171	180	186	181	177	165	181	174	173
Vehicle	6	189	190	194	196	167	206	197	191	184	169	174	181	188
Control	7	176	200	168	167	155	168	156	165	154	148	152	159	155
	8	188	104	183	185	183	184	165	185	186	167	157	158	152
	9	185	155	168	176	163	169	166	171	160	186	145	161	155
	10	200	181	228	216	168	202	208	218	203	207	185	215	204
	21	189	178	192	199	178	181	182	191	191	169	156	171	164
	22	187	184	181	175	167	174	174	179	168	158	157	142	158
	23	188	183	184	178	169	178	189	213	203	224	163	162	153
	24	190	197	196	203	179	199	208	200	196	194	180	186	178
50 mg/kg/day	25	175	186	180	221	165	183	181	182	177	234	195	172	164
Low	26	185	179	168	166	151	161	162	176	173	162	153	159	162
	27	194	132	166	172	169	184	179	178	169	160	155	165	162
	28	181	170	166	169	159	165	163	155	147	146	148	151	144
	29	207	204	193	197	180	259	187	195	180	176	179	182	180
	30	178	176	174	168	158	161	172	163	147	148	147	148	147
	41	178	177	172	176	--[a]	--	--	--	--	--	--	--	--
	42	186	178	170	172	168	187	187	195	184	191	179	180	168
	43	157	150	148	152	147	158	160	162	159	152	143	141	136
	44	190	186	181	178	177	179	177	171	166	164	155	162	158
200 mg/kg/day	45	187	171	166	166	169	178	184	169	167	168	151	151	150
Mid	46	184	172	174	178	169	174	183	179	175	169	169	165	164
	47	181	179	160	163	155	172	171	171	172	167	155	155	156
	48	199	184	183	184	165	183	178	170	174	164	155	156	152
	49	156	157	147	156	147	143	153	128	145	153	125	141	143
	50	193	188	184	184	169	173	176	176	165	166	167	171	160

[a]-- = accidental death; no data

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 9 (cont.)

Individual Weekly Food Consumption (g) - Males

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	61	188	182	175	186	160	182	165	173	174	167	165	163	163
	62	179	167	156	171	165	173	170	183	184	177	170	179	179
	63	170	164	169	180	159	181	177	165	164	166	157	164	166
	64	208	231	203	204	177	196	190	190	193	191	187	191	181
600 mg/kg/day	65	188	193	188	193	185	204	203	215	242	270	199	185	185
High	66	196	188	195	196	162	239	174	203	238	226	228	233	265
	67	161	150	146	156	141	154	153	156	155	157	153	153	154
	68	199	187	189	196	177	197	179	166	174	160	171	168	156
	69	197	192	196	193	182	197	201	195	200	169	173	192	196
	70	194	201	184	196	176	196	183	15[illegible]	203	197	189	192	197
	81	181	182	174	169	147	163	173	175	176	163	[55][a]	148	141
	82	161	159	146	157	139	157	154	157	160	151	149	150	141
	83	176	174	162	163	151	203	172	171	186	187	175	168	166
	84	176	168	165	164	147	164	161	170	170	168	149	148	158
600 mg/kg/day	85	204	211	230	220	200	205	216	190	207	216	203	192	193
High	86	183	172	176	167	161	173	178	172	174	173	170	160	170
Recovery	87	196	200	203	202	185	198	202	204	222	200	188	185	183
	88	171	174	165	170	157	170	169	166	170	175	168	153	143
	89	188	198	195	191	157	193	192	186	197	187	172	159	172
	90	171	170	156	127	149	164	168	173	172	164	156	157	157

[a]-- = Value not included in calculation of group mean because of weighing error during food "weigh in".

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APPENDIX 9 (cont.)

Individual Weekly Food Consumption (g) - Females

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	11	141	136	138	131	125	118	126	130	131	120	123	124	107
	12	126	129	129	125	114	111	111	115	114	111	112	108	99
	13	127	119	116	127	116	127	122	119	109	101	102	121	105
	14	124	122	130	146	141	146	154	156	177	194	137	164	144
0 mg/kg/day	15	116	105	105	110	107	111	103	104	103	98	96	99	93
Vehicle	16	126	120	136	122	108	115	122	119	116	114	121	112	105
Control	17	134	124	126	130	124	129	122	132	124	115	126	111	122
	18	139	131	131	150	128	137	132	160	142	145	118	123	113
	19	118	128	121	142	131	137	120	136	134	130	137	145	151
	20	119	110	112	117	110	109	109	104	107	96	91	101	95
	31	139	121	117	124	123	125	112	123	114	123	107	107	115
	32	137	130	124	123	113	132	122	120	123	114	114	120	101
	33	127	131	129	128	119	128	123	114	114	115	106	95	97
	34	101	119	108	131	109	122	120	116	123	120	100	109	102
50 mg/kg/day	35	117	100	124	110	114	107	115	102	121	105	102	103	94
Low	36	131	131	138	143	128	139	142	138	135	144	140	126	124
	37	130	127	123	127	126	133	123	125	123	127	116	103	106
	38	113	109	115	106	104	109	108	102	109	100	96	89	90
	39	142	128	127	135	126	130	121	129	151	127	123	124	117
	40	152	149	147	163	141	144	130	130	149	147	143	137	138
	51	154	144	138	147	135	146	136	136	135	130	127	130	126
	52	132	123	138	135	137	138	128	140	131	128	130	140	126
	53	116	116	118	120	124	124	129	124	125	126	126	120	110
	54	138	136	137	132	59	126	133	125	124	122	124	111	105
200 mg/kg/day	55	128	122	123	132	127	122	121	126	123	114	112	110	112
Mid	56	122	115	112	116	103	113	111	116	115	116	109	110	146
	57	142	129	127	160	133	138	138	139	140	130	119	124	122
	58	130	126	130	141	108	114	118	119	120	120	108	104	112
	59	124	113	123	118	115	120	121	112	119	119	112	123	120
	60	134	129	135	139	129	131	154	125	128	119	127	131	126

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APPENDIX 9 (cont.)

Individual Weekly Food Consumption (g) - Females

Treatment	Number	Day 7	Day 14	Day 21	Day 28	Day 35	Day 42	Day 49	Day 56	Day 63	Day 70	Day 77	Day 84	Day 91
	799	--[a]	117	121	120	125	137	129	135	127	187	116	115	114
	72	121	187	112	115	111	121	114	125	114	133	121	124	118
	73	126	123	119	127	124	135	139	137	136	126	125	134	128
	74	109	132	120	179	121	179	140	129	126	144	123	133	129
600 mg/kg/day	75	113	123	130	120	119	135	130	124	120	117	120	109	114
High	76	103	98	101	106	118	102	99	102	99	101	94	97	89
	77	123	120	111	120	91	132	122	121	121	123	113	119	114
	78	132	150	134	129	134	150	164	149	142	137	134	128	130
	79	118	142	135	132	121	161	131	130	133	134	134	122	121
	80	130	132	133	124	124	128	128	129	142	124	155	162	124
	91	130	144	136	141	144	149	144	142	147	151	134	127	124
	92	117	114	120	123	119	123	124	114	118	121	114	104	104
	93	102	100	106	105	112	118	97	100	98	100	106	160	99
	94	136	133	131	137	121	143	128	128	127	137	116	120	113
600 mg/kg/day	95	113	129	124	139	117	136	133	134	148	142	134	138	141
High	96	135	133	127	134	125	127	129	122	129	125	121	111	109
Recovery	97	113	129	117	124	122	137	136	140	135	129	123	115	116
	98	140	131	127	145	125	155	138	152	133	144	143	126	130
	99	131	141	144	157	133	163	153	146	145	145	130	139	134
	100	112	[170][b]	112	129	126	130	128	136	154	130	113	122	118

[a]-- = no data available; animal 799 replaced 71 (accidental death) on Day 3 of the study (food consumption not recorded for replacement animal during the first week of the study).
[b]-- = Food spilled; value not included in calculation of group mean.

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APPENDIX 10

Individual Weekly Food Consumption (g)
Recovery - Males

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119
	81	160	185	200	199
	82	154	160	167	166
	83	192	216	230	220
600 mg/kg/day	84	156	181	180	189
High	85	202	225	232	235
	86	180	201	200	184
	87	208	232	244	236
	88	172	183	176	180
	89	177	206	209	207
	90	165	187	192	190

Recovery - Females

Treatment	Number	Recovery Period Day 98	Day 105	Day 112	Day 119
	91	150	163	183	195
	92	113	117	114	119
	93	102	130	129	121
600 mg/kg/day	94	129	142	140	141
High	95	135	153	147	128
	96	116	143	136	128
	97	137	156	186	197
	98	142	148	139	137
	99	137	155	145	144
	100	167	149	117	120

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11

Individual Clinical Chemistry Values - Males
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	1	146.5	5.55	97.3	105	126	30	55	5	11.5	0.46	7.0	4.1	2.9	1.4	104.1	48.4	11.6	8.3	0.6
	2	145.0	5.91	98.1	314	178	28	61	3	10.8	0.46	6.5	4.1	2.4	1.7	112.4	41.4	11.1	8.2	0.3
	3	143.2	5.38	100.6	196	200	35	64	5	10.4	0.37	7.1	4.2	2.9	1.4	141.1	55.0	11.5	9.6	0.3
0 mg/kg/day	4	144.0	5.66	101.8	206	190	28	67	4	13.3	0.42	5.6	3.9	1.7	2.3	152.9	40.3	11.4	10.1	0.4
Vehicle	5	146.1	5.96	102.4	212	172	29	64	4	12.2	0.61	6.0	4.2	1.8	2.3	107.3	43.4	11.1	9.1	0.3
Control	6	145.4	4.99	100.3	106	204	29	65	2	10.9	0.49	6.7	4.1	2.6	1.6	131.8	36.5	11.4	10.0	0.3
	7	145.7	5.05	101.7	192	141	35	79	3	10.8	0.46	6.0	4.0	2.0	2.0	122.6	26.6	10.4	9.6	0.4
	8	146.5	5.42	100.7	88	213	31	59	4	14.4	0.51	6.3	3.8	2.5	1.5	117.8	39.6	11.0	8.8	0.3
	9	145.3	5.56	100.3	109	213	27	69	1	11.7	0.51	6.5	4.1	2.4	1.7	124.6	30.2	11.8	10.0	0.4
	10	144.9	4.57	103.1	117	104	31	60	3	14.5	0.43	6.0	3.5	2.5	1.4	150.6	36.6	11.7	9.2	0.4
	21	144.5	6.01	99.2	311	179	31	83	2	12.6	0.40	6.5	4.1	2.4	1.7	190.4	31.9	11.4	10.5	0.3
	22	146.5	5.87	98.7	93	225	27	64	1	9.4	0.32	6.3	4.2	2.1	2.0	110.3	33.1	11.2	8.5	0.5
	23	144.5	5.73	104.6	139	149	29	65	5	10.0	0.45	6.4	4.1	2.3	1.8	115.9	35.3	11.2	9.6	0.3
50 mg/kg/day	24	145.3	4.92	103.0	541	173	38	83	4	12.5	0.57	6.6	4.2	2.4	1.8	164.5	43.7	11.7	10.6	0.3
Low	25	146.7	5.66	100.8	128	254	28	68	2	10.7	0.51	6.5	4.1	2.4	1.7	90.2	32.6	11.2	9.2	0.4
	26	144.2	5.10	103.7	193	285	33	82	1	11.5	0.54	6.8	4.4	2.4	1.8	162.1	29.0	11.0	9.3	0.5
	27	145.8	6.27	103.9	124	201	30	92	4	13.7	0.51	6.3	4.1	2.2	1.9	115.4	27.0	11.2	10.0	0.5
	28	145.5	5.70	101.3	156	221	22	66	2	14.4	0.51	6.6	4.2	2.4	1.8	134.1	33.6	11.9	10.4	0.4
	29	146.7	5.09	103.7	125	165	20	64	1	16.5	0.56	6.4	4.2	2.2	1.9	193.1	37.3	12.0	10.5	0.3
	30	144.4	5.07	105.7	136	152	22	63	1	12.4	0.39	6.4	3.8	2.6	1.5	133.0	30.1	11.1	9.2	0.4

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11 (cont.)

Individual Clinical Chemistry Values - Males
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G RATIO	GLU	CHOL	Ca	PHOS	TBIL
	41	--[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	42	146.8	6.05	97.3	287	158	24	66	2	10.9	0.58	6.4	4.1	2.3	1.8	128.4	33.6	11.1	8.9	0.4
	43	143.5	5.65	101.8	209	226	31	63	2	13.1	0.46	6.4	4.2	2.2	1.9	120.5	36.3	11.3	9.5	0.4
	44	143.5	5.38	106.5	144	240	33	84	6	14.8	0.55	6.1	3.9	2.2	1.8	160.7	26.2	10.6	10.2	0.1
200 mg/kg/day	45	145.3	5.82	101.8	323	284	32	87	0	12.2	0.51	6.3	4.2	2.1	2.0	147.5	27.7	10.8	9.6	0.3
Mid	46	144.5	5.69	101.5	137	182	26	59	5	12.3	0.52	6.6	4.2	2.4	1.8	121.3	43.7	11.2	9.9	0.4
	47	146.3	5.24	100.7	111	143	26	72	1	10.2	0.52	6.0	4.0	2.0	2.0	112.3	25.2	10.9	10.0	0.3
	48	145.5	5.51	105.1	250	210	27	74	3	10.8	0.51	5.7	3.8	1.9	2.0	142.1	20.7	11.4	10.3	0.3
	49	144.4	5.67	100.7	130	226	22	63	2	13.6	0.43	5.8	4.0	1.8	2.2	129.2	27.3	11.3	10.6	0.4
	50	146.2	5.84	100.5	198	179	23	73	3	10.9	0.50	6.8	4.4	2.4	1.8	126.7	36.1	11.7	10.1	0.3
	61	143.2	6.73	104.4	105	426	32	64	3	11.1	0.57	6.0	4.3	1.7	2.5	140.1	34.0	11.4	9.6	0.4
	62	144.7	4.61	102.6	672	199	37	94	4	12.5	0.61	6.4	4.4	2.0	2.2	191.8	27.7	11.7	11.7	0.4
	63	145.3	5.50	102.2	114	333	40	67	3	11.3	0.49	6.7	4.2	2.5	1.7	100.1	27.8	11.0	8.3	0.3
	64	147.4	5.98	99.6	167	197	30	60	5	11.0	0.45	6.9	4.4	2.5	1.8	128.0	49.6	11.8	11.1	0.3
600 mg/kg/day	65	144.7	6.35	99.1	354	231	31	66	3	13.0	0.51	6.2	4.2	2.0	2.1	124.9	32.3	11.4	10.0	0.3
High	66	146.8	6.12	101.7	121	171	31	61	3	11.5	0.59	6.4	4.2	2.2	1.9	96.3	29.7	11.0	9.4	0.3
	67	143.6	5.46	106.3	180	225	28	58	3	10.3	0.42	6.0	4.1	1.9	2.2	103.5	25.6	10.4	9.1	0.3
	68	144.4	5.89	104.1	93	166	27	82	2	12.4	0.52	6.4	4.3	2.1	2.0	158.3	29.1	11.8	11.1	0.3
	69	146.2	5.75	101.5	272	186	33	67	2	11.2	0.50	6.5	4.5	2.0	2.3	155.0	43.2	12.0	10.2	0.3
	70	143.2	6.62	99.7	99	279	38	63	1	11.2	0.43	6.2	4.2	2.0	2.1	151.7	42.9	11.4	10.2	0.4

[a]-- = accidental death; no data

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11 (cont.)

Individual Clinical Chemistry Values - Males
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	81	153.8	5.22	95.8	107	168	30	63	6	12.0	0.59	7.1	4.7	2.4	2.0	120.6	31.0	4.3	9.0	0.4
	82	144.6	4.76	105.3	240	169	41	81	3	11.2	0.49	5.8	4.1	1.7	2.4	131.7	20.1	10.4	9.2	0.3
	83	146.2	5.78	99.1	75	252	33	67	4	13.0	0.43	6.4	4.4	2.0	2.2	115.1	32.0	11.2	9.7	0.5
	84	145.8	5.47	103.2	168	497	39	75	2	12.5	0.47	6.6	4.4	2.2	2.0	165.0	29.0	11.6	11.7	0.5
600 mg/kg/day	85	142.5	4.95	102.2	192	252	34	63	3	10.2	0.47	6.5	4.1	2.4	1.7	99.4	23.0	10.6	9.6	0.5
High	86	145.9	6.03	100.7	101	330	37	64	3	11.8	0.54	6.0	4.0	2.0	2.0	119.4	37.2	11.0	10.7	0.4
Recovery	87	145.4	5.68	102.5	579	236	33	65	1	9.2	0.49	6.0	4.2	1.8	2.3	105.2	22.2	11.0	10.4	0.4
	88	145.7	5.51	98.8	67	240	31	59	4	11.1	0.42	6.3	4.4	1.9	2.3	114.5	22.7	11.2	9.3	0.5
	89	146.3	5.71	102.7	196	138	24	63	3	10.9	0.48	5.8	4.1	1.7	2.4	140.5	22.6	11.1	10.7	0.4
	90	143.6	5.56	100.3	78	210	29	62	3	11.5	0.48	6.3	4.5	1.8	2.5	113.1	27.5	10.6	8.7	0.4

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11 (cont.)

Individual Clinical Chemistry Values - Females
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	11	142.6	5.57	104.6	184	157	28	66	1	15.7	0.57	6.5	4.6	1.9	2.4	202.3	31.3	11.0	10.2	0.3
	12	143.8	5.33	105.9	331	94	28	75	0	11.3	0.44	6.9	4.6	2.3	2.0	129.4	34.1	11.1	8.9	0.5
	13	145.8	5.82	102.8	196	95	28	71	0	12.7	0.52	6.4	4.3	2.1	2.0	102.7	34.5	11.2	9.6	0.4
0 mg/kg/day	14	144.9	4.71	103.0	83	125	20	46	2	12.1	0.45	6.8	4.8	2.0	2.4	114.8	53.3	11.0	8.7	0.4
Vehicle	15	150.0	5.39	107.3	415	105	27	89	3	13.2	0.50	6.8	4.5	2.3	2.0	114.5	25.6	10.9	9.2	0.4
Control	16	144.4	4.55	104.3	145	130	25	70	1	13.9	0.52	6.6	4.3	2.3	1.9	113.4	30.1	11.0	8.4	0.3
	17	142.3	4.85	101.1	130	157	29	65	3	14.1	0.44	6.4	3.8	2.6	1.5	101.9	47.1	11.1	8.7	0.4
	18	141.0	4.96	101.5	137	127	29	68	4	14.4	0.42	6.1	4.2	1.9	2.2	103.7	37.4	10.7	7.8	0.4
	19	142.9	4.81	105.3	114	66	25	55	3	14.1	0.48	6.8	4.5	2.3	2.0	118.0	38.0	11.2	9.1	0.4
	20	143.3	5.96	106.1	144	112	21	60	2	14.0	0.59	6.8	4.7	2.1	2.2	155.8	43.2	11.6	9.1	0.4
	31	145.1	5.25	103.2	149	116	22	79	3	15.9	0.62	6.7	4.5	2.2	2.0	111.1	39.7	11.0	9.6	0.5
	32	144.1	5.54	106.1	234	121	21	67	4	16.3	0.59	6.4	4.4	2.0	2.2	124.4	42.4	10.7	8.0	0.4
	33	145.2	5.99	104.0	92	97	24	65	5	12.1	0.45	6.5	4.2	2.3	1.8	112.3	47.7	11.0	8.8	0.5
50 mg/kg/day	34	144.8	6.02	102.6	144	112	24	68	3	12.3	0.59	6.7	4.7	2.0	2.4	124.1	25.9	11.1	9.3	0.3
Low	35	141.3	5.61	108.6	301	179	27	86	4	9.6	0.54	7.2	4.5	2.7	1.7	129.1	39.7	10.6	8.2	0.3
	36	143.2	6.12	102.5	198	101	31	71	0	13.2	0.56	6.3	4.2	2.1	2.0	126.5	36.6	11.0	10.9	0.6
	37	144.0	5.11	100.5	106	121	28	63	5	14.3	0.55	6.4	4.4	2.0	2.2	101.2	39.0	11.1	8.1	0.4
	38	143.4	5.51	105.5	172	126	22	55	4	15.6	0.53	6.1	4.2	1.9	2.2	106.1	27.8	11.0	QNS[a]	0.3
	39	141.3	5.33	102.3	84	102	28	60	4	11.8	0.45	7.0	5.0	2.0	2.5	175.5	39.7	11.5	9.6	0.4
	40	143.3	4.16	104.3	84	106	24	54	3	13.9	0.51	6.7	4.7	2.0	2.4	136.8	35.7	11.3	8.8	0.3

[a]QNS = quantity not sufficient

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11 (cont.)

Individual Clinical Chemistry Values - Females
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	51	147.0	5.70	101.6	202	120	21	60	2	11.3	0.53	6.9	5.0	1.9	2.6	115.1	37.7	12.0	9.3	0.3
	52	146.8	6.20	100.4	83	161	30	69	4	10.2	0.52	6.5	4.4	2.1	2.1	119.4	34.0	11.6	9.5	0.3
	53	146.3	5.98	108.6	235	103	21	76	1	13.7	0.54	6.3	4.2	2.1	2.0	112.2	25.7	10.8	11.0	0.6
	54	142.4	3.97	104.6	108	101	23	61	1	13.4	0.55	6.4	4.4	2.0	2.2	156.7	30.8	10.3	9.3	0.3
200 mg/kg/day Mid	55	144.6	4.85	108.8	173	105	31	84	2	12.3	0.46	7.2	4.9	2.3	2.1	133.7	35.8	11.6	12.1	0.5
	56	144.4	5.38	100.1	418	127	28	78	3	12.9	0.58	6.1	3.8	2.3	1.7	94.3	41.1	10.6	8.1	0.4
	57	138.3	4.77	98.4	132	179	35	62	6	10.1	0.45	6.1	4.3	1.8	2.4	106.1	35.0	10.1	7.0	0.4
	58	141.3	5.13	100.9	144	103	19	55	2	16.0	0.54	6.2	4.1	2.1	2.0	104.4	35.1	10.6	7.4	0.5
	59	145.1	5.41	106.3	253	76	26	57	2	14.8	0.40	6.4	4.2	2.2	1.9	122.5	44.0	11.3	8.2	0.5
	60	141.8	5.14	106.5	73	91	22	50	5	11.4	0.35	7.4	5.1	2.3	2.2	127.7	42.2	11.2	7.0	0.3
	799	145.7	5.44	103.6	191	145	34	77	1	11.9	0.58	6.7	4.6	2.1	2.2	151.7	36.6	11.6	10.4	0.5
	72	144.6	5.98	103.6	113	184	23	69	4	11.0	0.59	6.9	4.6	2.3	2.0	137.5	28.9	10.6	7.5	0.2
	73	141.6	5.63	104.0	109	153	32	61	4	9.0	0.48	6.7	4.5	2.2	2.0	114.0	42.3	10.9	11.7	0.6
	74	141.2	5.86	102.6	101	108	25	71	0	12.1	0.55	6.9	4.9	2.0	2.5	127.6	56.5	11.1	9.1	0.6
600 mg/kg/day High	75	141.9	5.79	103.6	155	128	28	71	5	11.9	0.56	6.5	4.4	2.1	2.1	146.9	46.0	10.8	13.2	0.4
	76	141.7	4.58	101.3	161	207	35	86	2	11.0	0.54	7.0	4.6	2.4	1.9	98.1	27.7	10.7	9.2	0.4
	77	140.8	4.95	104.1	191	192	42	72	2	10.8	0.44	6.2	4.4	1.8	2.4	103.6	42.4	10.2	8.4	0.4
	78	142.8	5.81	105.5	264	109	28	74	3	9.1	0.41	6.4	4.5	1.9	2.4	106.0	27.2	11.0	10.6	0.4
	79	142.3	5.36	106.5	93	109	31	59	3	11.4	0.54	6.8	4.9	1.9	2.6	118.7	48.5	11.5	10.0	0.5
	80	143.5	4.36	103.1	184	112	29	68	3	11.4	0.41	6.8	4.8	2.0	2.4	121.1	52.4	10.4	6.8	0.6

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 11 (cont.)

Individual Clinical Chemistry Values - Females
30-Day Interim

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLOB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBI
600 mg/kg/day High Recovery	91	146.9	6.78	103.8	98	103	33	75	1	11.0	0.55	7.6	5.1	2.5	2.0	113.3	58.0	11.6	8.7	0.4
	92	147.0	5.62	99.8	119	139	30	78	2	13.1	0.56	6.7	4.8	1.9	2.5	90.7	33.0	11.5	9.8	0.5
	93	145.2	6.07	104.0	130	163	25	69	1	11.2	0.53	6.9	5.0	1.9	2.6	131.5	28.5	11.4	10.4	0.4
	94	146.8	5.09	115.3	168	157	25	64	3	10.5	0.55	7.1	4.8	2.3	2.1	106.8	39.4	10.6	8.6	0.5
	95	142.8	4.90	105.1	172	226	36	75	4	10.5	0.48	6.4	4.4	2.0	2.2	103.7	22.7	11.1	12.3	0.4
	96	145.0	3.91	100.7	105	174	32	82	1	11.4	0.45	7.0	4.9	2.1	2.3	94.6	16.0	11.4	9.1	0.5
	97	141.2	5.60	102.7	109	169	34	67	2	10.0	0.55	5.8	4.1	1.7	2.4	100.9	35.4	10.3	8.7	0.4
	98	141.1	5.03	104.1	80	93	28	63	4	11.0	0.36	6.7	4.8	1.9	2.5	115.5	36.4	11.0	9.7	0.4
	99	140.4	4.28	99.0	74	136	28	59	3	12.0	0.42	6.9	4.7	2.2	2.1	115.8	36.0	10.9	8.4	0.5
	100	145.8	4.55	101.3	97	118	20	55	2	10.3	0.48	6.6	4.8	1.8	2.7	108.0	22.3	10.8	8.6	0.6

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12

Individual Clinical Chemistry Values - Males
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
0 mg/kg/day Vehicle Control	1	141.8	4.46	100.4	923	83	26	74	2	10.8	0.46	6.5	4.0	2.5	1.6	132.4	38.7	10.3	5.7	0.4
	2	141.4	5.09	105.2	1271	108	36	109	3	14.6	0.51	6.1	3.7	2.4	1.5	141.4	29.6	10.2	6.9	0.5
	3	142.1	4.43	105.4	616	152	35	86	2	10.1	0.42	6.6	3.9	2.7	1.4	160.1	53.8	10.2	6.4	0.4
	4	143.4	4.24	107.9	313	123	25	69	3	11.8	0.40	5.4	3.5	1.9	1.8	166.2	38.6	9.9	7.0	0.5
	5	146.1	4.58	109.7	338	110	27	46	3	12.1	0.48	6.0	3.9	2.1	1.9	144.6	38.2	10.4	6.3	0.5
	6	140.9	3.85	104.7	474	95	27	62	2	12.1	0.45	6.0	3.5	2.5	1.4	194.6	40.3	10.0	5.3	0.3
	7	141.9	4.10	104.3	707	91	43	79	1	11.6	0.46	5.5	3.4	2.1	1.6	107.5	35.5	9.9	6.5	0.6
	8	142.9	3.67	107.4	171	134	26	51	3	13.5	0.40	6.1	3.4	2.7	1.3	144.5	41.5	10.1	6.3	0.5
	9	141.9	4.49	103.4	810	124	25	83	4	10.9	0.18	6.0	3.5	2.5	1.4	158.6	29.5	10.6	7.5	0.4
	10	141.5	4.29	104.5	314	54	23	56	2	10.0	0.47	5.7	3.5	2.2	1.6	151.7	36.3	10.3	6.8	0.2
50 mg/kg/day Low	21	141.5	4.45	106.3	1133	131	38	143	1	10.2	0.47	5.9	3.4	2.5	1.4	142.2	39.0	10.0	5.7	0.4
	22	142.0	4.65	104.8	2435	128	38	95	1	13.7	0.63	6.0	3.9	2.1	1.9	132.1	24.9	10.6	7.4	0.5
	23	142.3	4.61	103.0	324	89	26	77	4	9.7	0.46	6.4	3.9	2.5	1.6	122.4	38.3	10.3	5.7	0.3
	24	142.7	4.10	105.0	350	99	29	68	3	11.7	0.40	5.9	3.8	2.1	1.8	165.3	51.4	10.5	5.5	0.4
	25	143.1	4.65	100.9	1073	134	22	101	3	12.9	0.39	5.9	3.6	2.3	1.6	118.3	29.0	10.0	7.5	0.5
	26	143.2	4.61	105.4	366	156	42	72	2	11.2	0.41	5.8	3.4	2.4	1.4	116.4	27.3	10.3	7.0	0.6
	27	143.2	5.27	108.5	2778	74	44	144	2	13.8	0.37	5.5	3.5	2.0	1.8	123.6	27.9	10.3	7.0	0.3
	28	143.7	4.20	108.3	689	126	26	93	2	12.7	0.43	5.7	3.5	2.2	1.6	143.3	21.9	9.7	7.5	0.4
	29	142.7	4.17	104.1	217	97	16	58	3	15.8	0.39	6.1	3.7	2.4	1.5	144.3	41.4	10.6	7.3	0.5
	30	143.0	4.38	106.7	251	85	20	54	2	11.0	0.36	6.0	3.6	2.4	1.5	138.0	29.4	10.1	6.7	0.4

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12 (cont.)

Individual Clinical Chemistry Values - Males
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	41	--[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	42	144.2	4.56	105.4	760	95	22	83	2	11.5	0.57	6.4	3.8	2.6	1.5	154.2	29.2	10.2	6.5	0.4
	43	143.3	4.73	107.6	916	149	23	98	3	10.5	0.38	6.3	3.8	2.5	1.5	136.3	41.0	10.3	6.4	0.5
	44	144.5	4.50	109.0	621	164	27	101	1	12.2	0.54	5.7	3.4	2.3	1.5	148.5	22.4	9.8	6.9	0.6
200 mg/kg/day Mid	45	142.6	4.58	104.3	1118	172	26	102	4	12.2	0.45	5.6	3.4	2.2	1.5	154.8	19.5	9.7	6.9	0.5
	46	141.2	4.60	104.1	2917	108	43	134	2	13.5	0.25	6.2	3.8	2.4	1.6	107.3	51.5	10.6	6.7	0.6
	47	144.1	4.08	104.9	239	74	22	63	1	11.8	0.36	6.1	3.9	2.2	1.8	126.4	30.7	10.5	6.0	0.4
	48	141.7	4.49	106.5	584	107	22	76	2	11.4	0.52	5.9	3.6	2.3	1.6	123.8	25.5	9.8	8.0	0.4
	49	141.1	3.88	107.6	953	122	25	68	2	14.6	0.34	5.6	3.5	2.1	1.7	145.4	28.5	10.3	8.0	0.5
	50	144.4	3.88	104.9	294	97	19	50	3	12.7	0.33	6.2	3.8	2.4	1.6	135.4	36.1	10.7	7.2	0.6
	61	139.9	4.51	106.7	953	257	28	92	2	13.0	0.56	5.7	3.8	1.9	2.0	129.6	37.2	9.8	6.9	0.6
	62	142.7	4.69	105.2	1155	188	42	117	2	13.2	0.49	6.1	3.9	2.2	1.8	115.8	54.7	10.3	8.3	0.6
	63	142.0	4.97	105.4	926	213	25	96	2	9.9	0.39	6.3	3.8	2.5	1.5	110.0	36.8	10.2	7.1	0.6
	64	144.1	4.67	105.0	506	154	45	97	0	11.9	0.54	6.8	4.2	2.6	1.6	149.0	78.5	10.4	8.5	0.2
600 mg/kg/day High	65	142.6	4.26	102.4	458	196	32	80	2	12.9	0.55	6.5	4.0	2.5	1.6	133.4	38.4	10.3	8.0	0.5
	66	140.9	4.49	107.4	625	87	45	108	1	10.7	0.45	5.4	3.4	2.0	1.7	112.9	25.0	9.9	7.5	0.6
	67	144.3	4.14	107.2	165	143	26	46	2	9.6	0.41	6.1	3.9	2.2	1.8	123.2	36.5	10.0	7.1	0.6
	68	142.4	4.92	110.4	944	99	37	107	1	11.9	0.45	6.2	3.8	2.4	1.6	104.5	33.8	10.1	8.0	0.4
	69	142.9	4.44	104.5	121	105	26	54	4	11.5	0.39	6.2	3.9	2.3	1.7	114.2	62.2	10.5	7.0	0.6
	70	142.0	4.35	107.6	93	116	20	57	2	10.5	0.44	5.6	3.6	2.0	1.8	118.8	49.4	10.4	7.4	0.7

[a]-- = accidental death; no data

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12 (cont.)

Individual Clinical Chemistry Values - Males
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	81	140.8	4.66	103.6	714	60	18	84	2	12.0	0.50	6.4	3.6	2.8	1.3	150.7	33.3	10.2	5.8	0.4
	82	142.0	4.03	103.2	372	72	23	61	1	12.3	0.48	6.2	3.8	2.4	1.6	167.2	34.7	10.2	5.7	0.4
	83	141.1	4.34	105.0	762	89	29	88	1	15.9	0.43	6.1	3.8	2.3	1.7	141.2	37.4	10.0	6.9	0.6
	84	144.7	4.18	105.2	754	121	29	104	0	13.4	0.55	5.9	3.7	2.2	1.7	157.8	34.7	9.8	6.2	0.4
600 mg/kg/day	85	141.3	4.57	104.4	1383	80	29	93	0	13.5	0.43	6.0	3.6	2.4	1.5	185.5	33.7	10.1	5.9	0.4
High	86	140.3	4.56	105.0	891	91	26	104	2	15.3	0.62	5.8	3.7	2.1	1.8	210.6	61.4	9.7	6.6	0.4
Recovery	87	142.0	4.07	106.2	543	66	21	70	1	12.8	0.42	5.8	3.6	2.2	1.6	203.8	36.5	9.9	5.5	0.4
	88	140.1	4.06	104.8	1000	84	29	73	0	13.9	0.46	6.0	3.8	2.2	1.7	185.0	25.9	9.9	5.1	0.4
	89	142.1	4.54	105.2	889	50	19	98	5	11.2	0.49	5.5	3.6	1.9	1.9	137.9	23.7	9.5	5.3	0.6
	90	141.6	4.28	104.0	1534	60	26	112	1	15.1	0.40	5.9	3.7	2.2	1.7	144.6	34.0	9.6	5.3	0.5

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12 (cont.)

Individual Clinical Chemistry Values - Females
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
0 mg/kg/day Vehicle Control	11	140.9	4.09	108.1	312	71	22	60	3	15.5	0.43	6.0	3.9	2.1	1.9	128.1	24.6	9.8	5.2	0.4
	12	143.2	3.86	104.8	144	41	18	47	1	11.7	0.58	6.6	4.3	2.3	1.9	131.6	32.7	10.5	6.3	0.6
	13	143.2	3.86	107.4	403	44	20	66	4	16.4	0.70	6.1	4.1	2.0	2.1	125.1	37.4	9.8	6.6	0.5
	14	142.6	4.20	103.2	539	50	20	56	2	14.9	0.44	7.2	4.8	2.4	2.0	132.1	52.3	10.4	7.7	0.4
	15	143.7	4.09	108.1	426	64	22	65	2	13.9	0.44	6.0	4.1	1.9	2.2	142.7	27.1	9.9	7.5	0.4
	16	142.6	4.08	105.2	682	84	21	100	2	14.9	0.61	5.9	3.9	2.0	2.0	119.6	36.2	10.0	4.2	0.4
	17	141.5	3.76	102.5	521	65	24	54	1	13.3	0.69	6.1	4.0	2.1	1.9	133.3	39.2	10.5	5.9	0.4
	18	141.4	3.87	105.4	506	70	16	64	0	15.4	0.46	5.6	3.8	1.8	2.1	128.6	27.3	9.5	5.7	0.6
	19	140.4	3.55	109.5	139	40	22	40	1	13.8	0.48	6.4	4.0	2.4	1.7	131.3	38.6	10.4	5.1	0.4
	20	141.6	4.02	104.3	364	65	21	48	2	15.1	0.47	6.1	4.2	1.9	2.2	145.5	47.0	10.2	6.5	0.5
50 mg/kg/day Low	31	142.1	4.15	107.4	517	43	18	79	2	15.9	0.64	6.8	4.7	2.1	2.2	135.5	38.7	10.2	5.0	0.5
	32	140.9	4.32	104.3	1208	47	20	105	3	17.1	0.54	5.8	3.8	2.0	1.9	146.4	27.2	9.8	7.5	0.5
	33	142.0	4.18	104.3	278	57	20	60	1	13.7	0.49	5.9	3.9	2.0	2.0	110.0	47.4	9.9	5.8	0.5
	34	139.6	4.26	103.7	757	51	19	75	5	12.7	0.33	6.6	4.6	2.0	2.3	126.0	31.8	10.5	7.6	0.5
	35	142.5	4.18	107.0	265	63	27	69	2	13.6	0.45	6.8	4.3	2.5	1.7	135.5	28.5	10.2	7.5	0.7
	36	140.8	4.03	106.5	1085	70	23	105	2	13.8	0.54	5.9	4.0	1.9	2.1	142.2	44.2	10.0	3.9	0.5
	37	141.5	4.48	108.8	539	58	23	71	0	14.1	0.51	6.0	4.0	2.0	2.0	135.1	29.5	10.1	5.9	0.7
	38	142.9	3.99	107.2	494	76	27	79	4	17.5	0.60	6.0	4.0	2.0	2.0	152.6	34.1	10.4	5.2	0.4
	39	142.0	3.81	105.6	431	53	27	58	5	8.4	0.48	6.7	4.8	1.9	2.5	140.3	34.9	10.5	5.5	0.4
	40	141.7	3.91	106.7	163	51	16	48	3	13.1	0.49	6.4	4.4	2.0	2.2	140.4	36.0	10.2	7.1	0.5

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12 (cont.)

Individual Clinical Chemistry Values - Females
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	51	144.1	4.13	107.0	392	58	18	59	2	11.1	0.34	6.4	4.4	2.0	2.2	162.8	36.6	10.4	7.1	0.5
	52	142.9	3.96	105.0	291	72	25	57	3	9.2	0.69	6.9	4.6	2.3	2.0	157.5	36.8	10.5	8.6	0.5
	53	143.2	4.03	105.2	272	49	29	62	3	11.5	0.51	6.1	4.4	1.7	2.6	127.7	27.7	10.2	6.7	0.5
	54	140.0	3.83	104.5	250	47	15	54	3	11.1	0.56	6.3	4.1	2.2	1.9	123.8	41.1	10.2	5.8	0.4
200 mg/kg/day	55	144.6	3.96	106.7	306	44	22	53	1	11.9	0.58	7.0	4.8	2.2	2.2	149.7	39.2	10.6	7.7	0.5
Mid	56	139.6	3.99	105.6	980	78	22	95	3	13.4	0.46	5.7	3.7	2.0	1.9	130.4	33.8	9.9	5.5	0.4
	57	139.0	3.96	107.0	523	72	25	67	1	10.6	0.64	6.3	4.1	2.2	1.9	126.9	38.6	9.9	5.2	0.5
	58	142.5	4.27	105.4	199	50	14	49	3	13.8	0.52	5.9	3.8	2.1	1.8	127.8	37.7	10.2	4.9	0.3
	59	139.4	3.95	106.7	297	31	39	81	2	12.8	0.47	7.5	5.2	2.3	2.3	143.3	46.3	11.2	6.5	0.3
	60	141.2	3.99	107.6	298	47	20	46	4	13.6	0.48	7.8	5.5	2.3	2.4	151.4	50.2	10.9	5.6	0.5
	799	138.4	3.93	102.1	236	101	21	50	1	11.3	0.45	6.1	4.2	1.9	2.2	138.6	48.2	10.3	6.8	0.5
	72	141.0	3.91	104.5	451	126	27	66	4	9.5	0.55	6.4	4.2	2.2	1.9	122.9	35.1	10.1	8.6	0.5
	73	139.6	3.55	96.7	245	57	22	41	3	11.0	0.51	7.7	5.4	2.3	2.3	129.5	77.0	11.6	8.0	0.6
	74	141.4	4.18	105.9	322	42	17	46	4	18.5	0.70	7.2	4.9	2.3	2.1	157.1	81.0	11.1	7.4	0.4
600 mg/kg/day	75	141.6	3.58	103.0	159	75	25	47	5	10.7	0.41	6.6	4.4	2.2	2.0	117.3	51.5	10.2	8.9	0.5
High	76	138.7	3.75	104.9	866	86	25	86	2	14.5	0.58	6.4	4.1	2.3	1.8	130.0	29.6	10.4	7.4	0.5
	77	133.4	3.99	97.4	692	79	31	80	2	12.8	0.48	6.1	4.3	1.8	2.4	132.1	53.2	10.2	6.1	0.4
	78	137.5	4.10	106.5	310	78	20	69	1	10.3	0.67	5.7	3.7	2.0	1.9	123.9	36.3	9.7	5.6	0.4
	79	135.5	4.27	101.0	229	51	27	60	2	24.3	0.74	7.4	5.3	2.1	2.5	162.2	63.3	11.3	6.7	0.6
	80	142.0	3.38	108.3	106	84	22	58	2	11.8	0.54	5.8	4.0	1.8	2.2	114.0	36.9	9.9	9.4	0.5

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 12 (cont.)

Individual Clinical Chemistry Values - Females
Terminal and Recovery

Treatment	Animal Number	Na	K	Cl	CK	ALK P	ALT	AST	GGT	BUN	CREA	T PRO	ALB	GLB	A/G Ratio	GLU	CHOL	Ca	PHOS	TBIL
	91	140.2	3.82	103.2	451	26	27	75	2	16.1	0.45	7.7	5.3	2.4	2.2	167.2	60.0	10.7	5.2	0.5
	92	143.9	4.17	107.4	1541	43	28	130	5	17.0	0.42	6.4	4.4	2.0	2.2	129.0	30.6	10.3	5.3	0.4
	93	141.8	4.38	107.0	324	49	27	71	1	16.3	0.60	5.7	4.0	1.7	2.4	121.0	16.1	9.7	6.0	0.5
	94	140.0	3.74	107.0	568	46	41	84	1	15.9	0.46	7.2	5.0	2.2	2.3	171.8	34.9	10.3	5.0	0.5
600 mg/kg/day	95	141.8	3.80	105.2	424	33	20	67	1	14.0	0.55	5.9	3.8	2.1	1.8	158.5	14.1	9.5	5.6	0.4
High	96	139.8	3.98	107.8	501	31	15	80	1	14.8	0.72	6.2	4.1	2.1	2.0	180.7	19.9	9.7	3.8	0.4
Recovery	97	140.5	4.27	108.2	374	55	28	80	3	15.6	0.63	5.8	3.8	2.0	1.9	144.6	28.0	9.9	4.4	0.3
	98	139.0	4.22	109.0	398	24	25	67	2	15.0	0.49	6.2	4.2	2.0	2.1	142.8	30.0	10.0	5.4	0.5
	99	139.7	3.78	107.6	207	41	35	71	2	15.0	0.51	5.9	3.9	2.0	2.0	137.7	30.4	9.8	5.4	0.5
	100	142.0	4.39	108.0	529	36	26	46	0	22.3	0.65	5.9	4.0	1.9	2.1	154.1	23.3	10.0	6.7	0.5

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 13

Individual Hematology Values - Males
30-Day Interim

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
0 mg/kg/day Vehicle Control	1	18.8	7.91	15.6	44.0	55.6	19.7	35.5	1064
	2	17.0	7.59	14.9	42.7	56.3	19.6	34.9	1272
	3	19.8	8.02	16.4	46.3	57.7	20.4	35.4	1227
	4	18.3	8.19	16.7	47.1	57.5	20.4	35.5	1126
	5	11.9	7.61	15.9	43.7	57.4	20.9	36.4	1018
	6	13.4	7.95	15.7	45.0	56.6	19.7	34.9	1234
	7	12.5	7.91	16.0	44.9	56.8	20.2	35.6	1205
	8	12.8	7.27	14.6	40.7	56.0	20.1	35.9	1132
	9	17.5	8.53	16.8	46.6	54.6	19.7	36.1	1278
	10	19.0	7.67	16.2	45.3	59.0	21.1	35.8	1004
50 mg/kg/day Low	21	11.6	6.87	14.6	40.1	58.3	21.3	36.4	1319
	22	9.1	6.80	14.6	40.1	58.9	21.5	36.4	1002
	23	15.6	7.47	15.5	43.6	58.4	20.7	35.6	1082
	24	16.2	7.62	16.0	43.9	57.6	21.0	36.4	1148
	25	16.3	7.77	16.1	46.5	59.8	20.7	34.6	993
	26	29.4[a]	7.17	14.9	40.6	56.6	20.8	36.7	1140
	27	31.1	7.49	15.0	42.2	56.4	20.0	35.5	1134
	28	14.8	8.33	16.4	47.5	57.0	19.7	34.5	1221
	29	17.4	7.55	15.1	43.3	57.4	20.0	34.9	1304
	30	23.0	7.50	15.8	42.0	56.0	21.1	37.6	1130
200 mg/kg/day Mid	41	--[b]	--	--	--	--	--	--	--
	42	12.9	7.43	15.4	42.9	57.7	20.7	35.9	976
	43	18.9	8.70	17.0	49.3	56.7	19.5	34.5	1063
	44	24.3	9.07	14.7	43.9	48.4	16.2	33.5	1222
	45	16.2	8.54	16.5	47.8	56.0	19.3	34.5	1043
	46	18.8	7.69	15.1	43.4	56.4	19.6	34.8	1108
	47	10.0	8.34	15.5	45.2	54.2	18.6	34.3	1264
	48	14.5	6.98	15.0	42.8	61.3	21.5	35.0	1082
	49	12.4	7.57	16.0	41.4	54.7	21.1	38.6	1050
	50	16.0	7.38	16.1	43.1	58.4	21.8	37.4	1176

[a] WBC corrected for NRBC
[b] -- = accidental death; no data

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 13 (cont.)

Individual Hematology Values - Males
30-Day Interim

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	61	13.9[a]	7.35	15.4	44.7	60.8	21.0	34.5	936
	62	14.3	7.26	14.3	41.1	56.6	19.7	34.8	1155
	63	17.5	8.11	16.8	49.0	60.4	20.7	34.3	1049
	64	16.9	8.22	16.7	46.1	56.1	20.3	36.2	1197
600 mg/kg/day	65	13.0	8.23	16.1	45.3	55.1	19.6	35.5	1046
High	66	18.3	7.62	15.6	44.1	57.9	20.5	35.4	1278
	67	11.0	7.85	15.9	44.4	56.5	20.3	35.8	1004
	68	23.3	7.65	16.0	43.6	57.0	20.9	36.7	1257
	69	14.8[a]	8.25	15.8	45.8	55.5	19.2	34.5	1131
	70	23.7	6.84	14.4	40.2	58.7	21.1	35.8	1073
	81	8.8	6.96	14.4	39.7	57.1	20.7	36.3	990
	82	13.9	8.36	16.9	48.2	57.7	20.2	35.1	832
	83	14.2	8.25	15.8	46.0	55.7	19.2	34.3	1101
	84	16.3[a]	8.40	17.2	48.4	57.6	20.5	35.5	1204
600 mg/kg/day	85	20.6	7.81	16.1	45.1	57.7	20.6	35.7	1105
High	86	14.2	7.66	15.5	43.6	56.9	20.2	35.6	1126
Recovery	87	17.0	7.43	15.7	44.1	59.3	21.1	35.6	1037
	88	11.7	7.73	16.1	45.8	59.2	20.8	35.2	1067
	89	13.5	6.51	14.6	39.1	60.0	22.4	37.3	1054
	90	16.4	8.29	16.7	46.4	56.0	20.1	36.0	968

[a] WBC corrected for NRBC

APPENDIX 13 (cont.)

Individual Hematology Values - Females
30-Day Interim

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	11	22.0	8.32	16.1	46.1	55.4	19.4	34.9	967
	12	11.7	8.10	16.1	45.8	56.5	19.9	35.2	1244
	13	13.9	8.45	16.5	48.8	57.8	19.5	33.8	1107
0 mg/kg/day	14	7.1	6.78	14.9	40.6	59.9	22.0	36.7	1126
Vehicle	15	9.9	8.42	16.4	46.7	55.5	19.5	35.1	1149
Control	16	17.1	8.13	16.1	46.3	57.0	19.8	34.8	1053
	17	21.2	7.56	15.4	42.4	56.1	20.4	36.3	1424
	18	17.8	7.52	14.9	43.4	57.7	19.8	34.3	1219
	19	11.9	7.70	15.1	43.2	56.1	19.6	35.0	1403
	20	9.6	8.00	16.0	45.2	56.5	20.0	35.4	1126
	31	13.6	8.20	15.7	45.3	55.2	19.1	34.7	1312
	32	14.7	7.70	14.9	43.4	56.3	19.4	34.3	1331
	33	14.1	8.08	15.7	45.0	55.7	19.4	34.9	1105
50 mg/kg/day	34	10.5	7.32	15.2	42.0	57.4	20.8	36.2	1159
Low	35	10.5	7.08	14.9	39.5	55.8	21.0	37.7	1119
	36	11.6	7.58	15.8	43.7	57.7	20.8	36.2	1088
	37	11.5	7.91	15.5	45.1	57.0	19.6	34.4	1214
	38	13.0	8.18	16.1	46.4	56.7	19.7	34.7	1043
	39	18.3	7.33	14.6	40.9	55.8	19.9	35.7	1148
	40	15.4	7.19	15.0	42.4	59.0	20.9	35.4	1152
	51	12.3	8.10	16.2	47.2	58.3	20.0	34.3	1190
	52	14.4	7.74	16.5	45.0	58.1	21.3	36.7	1110
	53	14.5	8.45	16.2	47.7	56.5	19.2	34.0	1007
	54	12.2	6.99	14.5	41.4	59.2	20.7	35.0	1042
200 mg/kg/day	55	19.9	8.06	16.7	47.3	58.7	20.7	35.3	1106
Mid	56	15.9	7.63	15.4	43.0	56.4	20.2	35.8	901
	57	21.2	7.95	15.2	44.9	56.5	19.1	33.9	1118
	58	8.6	7.89	16.3	46.3	58.7	20.7	35.2	1143
	59	13.6	7.08	15.0	42.1	59.5	21.2	35.6	1743
	60	13.6	7.02	14.9	41.7	59.4	21.2	35.7	1126

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APPENDIX 13 (cont.)

Individual Hematology Values - Females
30-Day Interim

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	799	15.0	8.25	16.3	46.7	56.6	19.8	34.9	1080
	72	5.8	7.66	15.2	43.7	57.1	19.8	34.8	983
	73	18.7	7.87	15.5	43.7	55.5	19.7	35.5	1227
	74	11.7	7.43	15.8	44.3	59.6	21.3	35.7	1061
600 mg/kg/day	75	13.1	8.31	16.2	46.1	55.5	19.5	35.1	1060
High	76	18.9	8.49	15.9	47.5	56.0	18.7	33.5	1098
	77	18.4	7.58	16.0	42.2	55.7	21.1	37.9	1014
	78	12.0	7.59	15.5	44.3	58.4	20.4	35.0	1180
	79	14.4	7.58	15.7	42.6	56.2	20.7	36.9	1163
	80	7.6	7.64	15.8	44.2	57.8	20.7	35.7	1116
	91	16.3	7.59	16.8	47.4	62.4	22.1	35.4	1070
	92	11.0	8.83	16.5	48.5	54.9	18.7	34.0	1156
	93	8.9	8.01	16.7	44.9	56.0	20.8	37.2	1160
	94	8.6	7.15	15.0	41.3	57.8	21.0	36.3	1176
600 mg/kg/day	95	15.5	7.65	16.0	44.1	57.6	20.9	36.3	1025
High	96	7.4	8.25	16.2	46.9	56.9	19.6	34.5	814
Recovery	97	10.5	7.66	15.2	44.4	58.0	19.8	34.2	1054
	98	15.5	7.92	16.2	45.1	57.0	20.5	35.9	1054
	99	10.2	6.88	14.5	41.2	59.9	21.1	35.2	1044
	100	8.7	7.61	15.2	43.5	57.2	20.0	34.9	1091

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 14

Individual Hematology Values - Males
Terminal and Recovery

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	1	13.2	9.44	16.2	44.9	47.6	17.2	36.1	937
	2	10.3	9.23	15.7	45.0	48.8	17.0	34.9	1269
	3	10.3	8.56	15.5	42.9	50.1	18.1	36.1	1073
0 mg/kg/day	4	11.0	8.16	14.7	40.6	49.8	18.0	36.2	1003
Vehicle	5	3.8	8.81	15.4	43.9	49.8	17.5	35.1	994
Control	6	10.4	8.87	15.7	43.1	48.6	17.7	36.4	1169
	7	8.1	9.25	16.3	45.8	49.5	17.6	35.6	1133
	8	7.5	8.89	14.9	43.1	48.5	16.8	34.6	1082
	9	9.9	9.15	15.6	43.3	47.3	17.0	36.0	1328
	10	6.2	9.05	16.1	46.2	51.1	17.8	34.8	933
	21	8.1	8.07	14.1	38.9	48.2	17.5	36.2	1316
	22	3.6	8.76	16.3	44.7	51.0	18.6	36.5	974
	23	8.3	7.98	14.7	39.6	49.6	18.4	37.1	989
50 mg/kg/day	24	9.1	8.45	15.0	42.1	49.8	17.8	35.6	1116
Low	25	10.9	8.37	16.1	42.9	51.2	19.2	37.5	1004
	26	5.1	8.81	15.0	42.6	48.3	17.0	35.2	1015
	27	11.1	8.37	15.0	40.5	48.4	17.9	37.0	1226
	28	8.4	8.88	16.0	44.9	50.6	18.0	35.6	1046
	29	10.3	7.87	14.7	39.2	49.8	18.7	37.5	1238
	30	6.0	9.45	16.1	47.0	49.7	17.0	34.3	1056
	41	--[a]	--	--	--	--	--	--	--
	42	6.5	8.80	15.4	43.1	49.0	17.5	35.7	879
	43	9.6	9.29	16.1	44.3	47.7	17.3	36.3	1123
	44	8.5	8.50	14.7	40.9	48.1	17.3	35.9	1006
200 mg/kg/day	45	6.0[b]	8.94	15.2	43.3	48.4	17.0	35.1	1003
Mid	46	8.4	9.03	16.1	44.5	49.3	17.8	36.2	969
	47	6.8	9.88	16.1	46.1	46.7	16.3	34.9	1226
	48	11.7	8.12	15.3	42.1	51.9	18.8	36.3	1095
	49	8.0	9.66	17.3	48.1	49.8	17.9	36.0	993
	50	7.7	8.56	16.3	44.3	51.8	19.0	36.8	1075

[a]-- = accidental death; no data
[b] WBC corrected for NRBC

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 14 (cont.)

Individual Hematology Values - Males
Terminal and Recovery

Treatment	Animal Number	WBC thsn/cmm	RBC mill/cmm	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC %	PLT thsn/cmm
	61	7.2	8.91	16.2	46.7	52.4	18.2	34.7	1030
	62	6.5	8.66	15.1	42.1	48.6	17.4	35.9	1425
	63	7.1	8.54	15.5	44.2	51.7	18.1	35.1	1050
	64	7.1	8.61	14.7	41.5	48.2	17.1	35.4	1237
600 mg/kg/day	65	7.0	9.18	15.0	43.5	47.4	16.3	34.5	1002
High	66	6.3	8.24	14.8	41.3	50.1	18.0	35.8	1143
	67	6.0	8.86	15.5	43.6	49.2	17.5	35.6	939
	68	11.2	9.04	15.9	43.8	48.5	17.6	36.3	1266
	69	8.4	8.61	15.2	42.2	49.0	17.7	36.0	1096
	70	10.4	8.58	16.1	44.0	51.3	18.8	36.6	1065
	81	5.1	8.05	14.7	38.7	48.1	18.3	38.0	1089
	82	8.1	8.89	16.2	44.2	49.7	18.2	36.7	857
	83	9.4	8.61	15.2	40.0	46.5	17.7	38.0	1169
	84	8.5	8.21	15.4	41.2	50.2	18.8	37.4	1263
600 mg/kg/day	85	8.7	8.69	15.5	41.7	48.0	17.8	37.2	1065
High	86	6.8	8.69	14.9	40.8	47.0	17.1	36.5	1179
Recovery	87	8.5	8.36	15.5	42.4	50.7	18.5	36.6	1056
	88	6.9	8.83	16.3	44.2	50.1	18.5	36.9	1034
	89	8.0	7.69	14.7	39.4	51.3	19.1	37.3	1126
	90	8.2	9.05	15.9	43.8	48.4	17.6	36.3	990

APPENDIX 14 (cont.)

Individual Hematology Values - Females
Terminal and Recovery

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	11	6.7	8.12	14.7	41.5	51.1	18.1	35.4	913
	12	6.8	8.57	15.5	43.9	51.2	18.1	35.3	1148
	13	8.3	7.85	15.0	42.0	53.5	19.1	35.7	1051
0 mg/kg/day	14	3.5	6.09	12.9	34.2	56.2	21.2	37.7	1425
Vehicle	15	3.6	8.83	16.3	46.3	52.4	18.5	35.2	1019
Control	16	5.2	7.84	14.7	40.1	51.1	18.8	36.7	909
	17	7.3	8.02	14.7	40.6	50.6	18.3	36.2	1222
	18	7.6	8.04	15.3	41.7	51.9	19.0	36.7	1101
	19	3.7	7.58	14.2	39.0	51.4	18.7	36.4	1138
	20	2.6	7.87	14.9	40.8	51.8	18.9	36.5	1015
	31	3.7	8.36	15.1	42.6	51.0	18.1	35.4	1290
	32	7.7	8.33	15.1	42.1	50.5	18.1	35.9	1303
	33	8.2	8.05	14.7	40.8	50.7	18.3	36.0	1010
50 mg/kg/day	34	5.0	8.05	15.4	42.3	52.5	19.1	36.4	1135
Low	35	5.7	7.99	14.8	40.7	51.0	18.5	36.4	962
	36	6.3	7.73	15.1	40.3	52.1	19.5	37.5	1017
	37	3.7	8.21	15.5	43.1	52.5	18.9	36.0	1196
	38	5.7	8.45	15.3	44.2	52.3	18.1	34.6	1007
	39	5.3	7.41	13.8	37.3	50.3	18.6	37.0	960
	40	4.3	7.53	15.1	40.7	54.0	20.1	37.1	1011
	51	5.3	8.09	15.7	43.3	53.5	19.4	36.3	1109
	52	5.5	7.75	15.1	41.6	53.7	19.5	36.3	985
	53	8.5	8.83	16.1	46.8	53.0	18.2	34.4	982
	54	6.7	7.66	14.6	39.2	51.2	19.1	37.2	990
200 mg/kg/day	55	5.2	8.41	15.9	44.5	52.9	18.9	35.7	971
Mid	56	6.2	8.28	15.9	42.9	51.8	19.2	37.1	864
	57	5.3	7.57	14.4	39.5	52.2	19.0	36.5	1006
	58	2.6	8.22	15.9	44.1	53.6	19.3	36.1	931
	59	4.9	6.86	13.9	37.5	54.6	20.3	37.1	1216
	60	3.4	7.33	14.3	39.4	53.8	19.5	36.3	1053

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 14 (cont.)

Individual Hematology Values - Females
Terminal and Recovery

Treatment	Animal Number	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
	799	11.0	8.12	14.9	41.8	51.5	18.3	35.6	1118
	72	3.5	7.38	13.9	39.3	53.2	18.8	35.4	892
	73	5.5	8.89	15.6	45.1	50.7	17.5	34.6	1109
	74	4.5	8.00	15.6	42.7	53.4	19.5	36.5	1215
600 mg/kg/day	75	4.8	8.83	15.5	44.7	50.6	17.6	34.7	969
High	76	5.8	9.18	16.4	46.6	50.8	17.9	35.2	1268
	77	6.0	8.09	15.2	42.5	52.5	18.8	35.8	894
	78	5.4	7.90	14.3	40.6	51.4	18.1	35.2	1010
	79	5.4	8.67	15.9	44.9	51.8	18.3	35.4	1053
	80	5.4	8.36	16.1	45.2	54.1	19.3	35.6	1005
	91	8.2	6.73	13.9	36.3	53.9	20.7	38.3	939
	92	5.2	8.24	15.2	41.0	49.7	18.4	37.1	1088
	93	3.8	7.66	14.8	39.9	52.1	19.3	37.1	1077
	94	3.6	7.41	14.4	37.9	51.1	19.4	38.0	1108
600 mg/kg/day	95	6.2	8.04	15.6	41.9	52.1	19.4	37.2	1176
High	96	3.5	8.05	14.8	40.3	50.0	18.4	36.7	847
Recovery	97	3.5	7.70	15.6	40.5	52.6	20.3	38.5	963
	98	3.9	7.90	15.4	40.8	51.7	19.5	37.7	993
	99	4.5	7.70	15.6	41.1	53.4	20.3	38.0	1011
	100	3.5	7.58	15.2	39.6	52.2	20.1	38.4	873

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APPENDIX 15

Individual Absolute Differential White Blood Cell Counts - Males
30 Day Interim

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	1	0	2.4	15.4	0.8	0.2	0	0
	2	0	2.4	14.1	0.5	0.0	0	0
0 mg/kg/day	3	0	4.0	14.5	1.4	0.0	0	0
Vehicle	4	0	1.5	16.1	0.5	0.2	0	0
Control	5	0	1.3	9.8	0.7	0.1	0	0
	6	0	3.6	8.8	0.8	0.1	0	0
	7	0	1.5	10.3	0.6	0.1	0	0
	8	0	1.8	10.0	0.9	0.1	0	0
	9	0	3.0	13.3	1.1	0.2	0	0
	10	0	2.5	16.0	0.6	0.0	0	0
	21	0	0.7	10.2	0.6	0.1	0	0
	22	0	1.5	7.3	0.4	0.0	0	0
50 mg/kg/day	23	0	2.2	12.6	0.6	0.2	0	0
Low	24	0	1.9	13.0	1.0	0.3	0	0
	25	0	2.1	13.4	0.8	0.0	0	0
	26	1	12.1	15.3	1.8	0.3	0	0
	27	0	12.8	16.5	1.6	0.3	0	0
	28	0	1.8	12.1	0.7	0.1	0	0
	29	0	1.7	15.1	0.5	0.0	0	0
	30	0	6.2	15.1	0.7	0.0	0	0
	41	--[a]	--	--	--	--	--	--
	42	0	2.3	10.1	0.4	0.1	0	0
	43	0	2.1	15.7	1.1	0.0	0	0
	44	0	2.7	19.7	1.7	0.2	0	0
200 mg/kg/day	45	0	2.1	13.1	0.8	0.2	0	0
Mid	46	0	2.3	15.8	0.6	0.2	0	0
	47	0	1.5	8.1	0.4	0.0	0	0
	48	0	1.7	11.9	0.7	0.1	0	0
	49	0	1.1	10.4	0.6	0.2	0	0
	50	0	1.8	13.8	0.3	0.2	0	0

[a]-- = accidental death; no data

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APPENDIX 15 (cont.)

Individual Absolute Differential White Blood Cell Counts - Males
30-Day Interim

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	61	1	1.8	11.9	0.1	0.0	0	0
	62	0	3.1	10.3	0.9	0.0	0	0
600 mg/kg/day	63	0	2.1	14.7	0.7	0.0	0	0
High	64	0	1.7	14.2	0.8	0.2	0	0
	65	0	2.1	10.1	0.8	0.0	0	0
	66	0	4.2	13.2	0.7	0.2	0	0
	67	0	1.2	9.1	0.6	0.1	0	0
	68	0	4.7	17.7	0.9	0.0	0	0
	69	2	1.5	12.3	0.9	0.1	0	0
	70	0	3.1	19.2	1.2	0.2	0	0
	81	0	1.8	6.8	0.3	0.0	0	0
	82	0	1.7	11.4	0.7	0.1	0	0
600 mg/kg/day	83	0	1.7	11.9	0.6	0.0	0	0
High	84	1	2.6	13.1	0.7	0.0	0	0
Recovery	85	0	4.9	14.8	0.8	0.0	0	0
	86	0	1.6	12.1	0.6	0.0	0	0
	87	0	1.4	15.0	0.7	0.0	0	0
	88	0	1.5	9.8	0.4	0.0	0	0
	89	0	1.1	12.2	0.3	0.0	0	0
	90	0	1.5	14.1	0.7	0.2	0	0

APPENDIX 15 (cont.)

Individual Absolute Differential White Blood Cell Counts - Females
30-Day Interim

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	11	0	3.7	16.5	1.5	0.2	0	0
	12	0	1.6	9.1	0.8	0.1	0	0
0 mg/kg/day	13	0	1.0	12.5	0.4	0	0	0
Sham	14	0	0.9	5.9	0.3	0	0	0
Control	15	0	2.2	6.9	0.6	0.2	0	0
	16	0	1.2	15.0	0.7	0.2	0	0
	17	0	3.0	17.0	1.3	0	0	0
	18	0	2.5	14.1	1.1	0.2	0	0
	19	0	2.1	8.9	0.7	0.1	0	0
	20	0	1.0	8.4	0.3	0	0	0
	31	0	1.4	11.6	0.7	0	0	0
	32	0	1.3	12.5	0.9	0	0	0
50 mg/kg/day	33	0	1.3	12.1	0.7	0	0	0
Low	34	0	1.1	8.8	0.6	0	0	0
Dose	35	0	1.8	8.1	0.6	0	0	0
	36	0	1.6	9.6	0.3	0	0	0
	37	0	0.9	10.0	0.5	0.1	0	0
	38	0	1.4	11.2	0.4	0	0	0
	39	0	1.3	16.5	0.5	0	0	0
	40	0	0.9	13.9	0.6	0	0	0
	51	0	1.6	10.1	0.5	0.1	0	0
	52	0	1.6	11.8	1.0	0	0	0
	53	0	1.9	11.6	1.0	0	0	0
	54	0	2.1	8.9	0.9	0.4	0	0
200 mg/kg/day	55	0	3.8	14.5	1.2	0.4	0	0
Mid	56	0	2.2	12.9	0.8	0	0	0
Dose	57	0	2.8	17.8	0.6	0	0	0
	58	0	1.1	7.1	0.3	0.1	0	0
	59	0	1.9	11.0	0.7	0	0	0
	60	0	2.0	10.9	0.7	0	0	0

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90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 15 (cont.)

Individual Absolute Differential White Blood Cell Counts - Females
30-Day Interim

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	799	0	1.2	13.4	0.5	0	0	0
	72	0	0.6	4.9	0.3	0	0	0
600 mg/kg/day	73	0	2.4	15.5	0.7	0	0	0
High	74	0	1.2	9.8	0.6	0.1	0	0
Dose	75	0	2.0	10.0	1.0	0.1	0	0
	76	0	6.6	10.4	1.9	0	0	0
	77	0	1.8	15.6	0.9	0	0	0
	78	0	0.8	10.7	0.5	0	0	0
	79	0	1.3	13.0	0.1	0	0	0
	80	0	0.8	6.7	0.2	0	0	0
	91	0	1.5	13.7	1.0	0.2	0	0
	92	0	1.1	9.1	0.7	0.1	0	0
600 mg/kg/day	93	0	0.7	7.7	0.4	0.1	0	0
High	94	0	1.4	6.7	0.4	0.1	0	0
Recovery	95	0	0.9	14.0	0.5	0.2	0	0
	96	0	1.3	5.7	0.3	0.1	0	0
	97	0	1.2	8.9	0.4	0.0	0	0
	98	0	2.8	11.8	0.9	0.0	0	0
	99	0	1.1	8.8	0.3	0.0	0	0
	100	0	1.1	7.2	0.3	0.0	0	0

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 16

Individual Absolute Differential White Blood Cell Counts - Males
Terminal and Recovery

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	1	0	0.8	12.1	0.1	0.1	0	0
	2	0	1.4	8.8	0.0	0.1	0	0
0 mg/kg/day	3	0	3.2	6.9	0.2	0.0	0	0
Vehicle	4	0	1.5	9.4	0.0	0.1	0	0
Control	5	0	0.6	3.0	0.1	0.1	0	0
	6	0	2.3	7.9	0.1	0.1	0	0
	7	0	3.1	4.9	0.0	0.1	0	0
	8	0	3.2	4.1	0.2	0.1	0	0
	9	0	1.1	8.4	0.2	0.2	0	0
	10	0	0.7	5.3	0.0	0.2	0	0
	21	0	0.5	7.5	0.2	0.0	0	0
	22	0	0.5	3.0	0.1	0.0	0	0
50 mg/kg/day	23	0	0.8	7.2	0.2	0.0	0	0
Low	24	0	3.4	5.3	0.2	0.3	0	0
	25	0	1.3	9.5	0.1	0.0	0	0
	26	0	1.3	3.4	0.4	0.1	0	0
	27	0	2.7	8.0	0.3	0.1	0	0
	28	0	3.1	5.0	0.2	0.1	0	0
	29	0	2.1	8.0	0.2	0.0	0	0
	30	0	0.8	5.0	0.2	0.1	0	0
	41	--[a]	--	--	--	--	--	--
	42	0	1.1	5.3	0.1	0.0	0	0
	43	0	1.8	7.6	0.1	0.1	0	0
	44	0	1.4	6.9	0.2	0.0	0	0
200 mg/kg/day	45	2	1.2	4.4	0.1	0.1	0	0
Mid	46	0	2.0	6.0	0.3	0.2	0	0
	47	0	1.6	4.7	0.5	0.0	0	0
	48	0	1.6	9.6	0.5	0.0	0	0
	49	0	1.0	6.6	0.4	0.0	0	0
	50	0	1.0	6.5	0.2	0.0	0	0

[a]-- = accidental death; no data

APPENDIX 16 (cont.)

Individual Absolute Differential White Blood Cell Counts - Males
Terminal and Recovery

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	61	0	1.3	5.5	0.4	0.0	0	0
	62	0	1.9	4.3	0.3	0.0	0	0
600 mg/kg/day	63	0	1.2	5.7	0.1	0.1	0	0
High	64	0	2.2	4.3	0.6	0.0	0	0
	65	0	3.2	3.5	0.3	0.1	0	0
	66	0	1.2	4.9	0.1	0.1	0	0
	67	0	1.0	4.9	0.2	0.0	0	0
	68	0	1.0	10.2	0.0	0.0	0	0
	69	0	0.6	7.5	0.3	0.0	0	0
	70	0	1.5	8.7	0.1	0.1	0	0
	81	0	0.7	4.1	0.3	0.1	0	0
	82	0	0.7	7.4	0.0	0.0	0	0
600 mg/kg/day	83	0	0.9	8.2	0.2	0.1	0	0
High	84	0	1.1	7.2	0.1	0.1	0	0
Recovery	85	0	0.9	7.5	0.3	0.0	0	0
	86	0	1.0	5.8	0.1	0.0	0	0
	87	0	1.3	6.8	0.3	0.1	0	0
	88	0	1.6	5.1	0.1	0.1	0	0
	89	0	0.8	6.8	0.2	0.2	0	0
	90	0	1.3	6.6	0.2	0.0	0	0

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 16 (cont.)

Individual Absolute Differential White Blood Cell Counts - Females
Terminal and Recovery

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	11	0	1.3	5.2	0.2	0.0	0	0
	12	0	1.2	5.4	0.1	0.1	0	0
0 mg/kg/day	13	0	1.3	6.8	0.2	0.0	0	0
Vehicle	14	0	0.2	2.8	0.5	0.0	0	0
Control	15	0	0.5	2.9	0.1	0.1	0	0
	16	0	0.4	4.8	0.1	0.0	0	0
	17	0	0.4	6.5	0.1	0.2	0	0
	18	0	0.4	7.1	0.0	0.1	0	0
	19	0	1.4	2.2	0.1	0.0	0	0
	20	0	0.4	2.2	0.0	0.0	0	0
	31	0	0.9	2.7	0.1	0.0	0	0
	32	0	0.7	6.9	0.1	0.1	0	0
50 mg/kg/day	33	0	0.5	7.5	0.2	0.0	0	0
Low	34	0	0.4	4.3	0.3	0.2	0	0
	35	0	0.4	5.0	0.2	0.2	0	0
	36	0	1.4	4.7	0.0	0.1	0	0
	37	0	0.5	3.0	0.1	0.1	0	0
	38	0	0.9	4.6	0.2	0.1	0	0
	39	0	0.4	4.8	0.0	0.2	0	0
	40	0	0.5	3.7	0.0	0.1	0	0
	51	0	1.1	3.9	0.3	0.1	0.1	0
	52	0	2.6	2.5	0.1	0.3	0	0
	53	0	1.3	6.9	0.2	0.2	0	0
	54	0	0.7	5.8	0.2	0.1	0	0
200 mg/kg/day	55	0	1.1	4.0	0.1	0.1	0	0
Mid	56	0	0.4	5.7	0.0	0.1	0	0
	57	0	0.8	4.3	0.1	0.1	0	0
	58	0	0.2	2.2	0.1	0.0	0	0
	59	0	0.9	3.8	0.2	0.0	0	0
	60	0	0.3	3.0	0.1	0.1	0	0

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APPENDIX 16 (cont.)

Individual Absolute Differential White Blood Cell Counts - Females
Terminal and Recovery

Treatment	Animal Number	NRBC	MAT NEU	LYM	MONO	EOS	BASO	IMM NEU
	799	0	0.8	9.7	0.3	0.2	0	0
	72	0	1.5	1.9	0.1	0.0	0	0
600 mg/kg/day	73	0	1.1	4.2	0.2	0.0	0	0
High	74	0	1.2	2.7	0.5	0.0	0	0
	75	0	0.6	4.0	0.1	0.0	0	0
	76	0	0.6	4.6	0.5	0.1	0	0
	77	0	0.9	4.7	0.2	0.2	0	0
	78	0	1.1	4.2	0.0	0.1	0	0
	79	0	1.5	3.4	0.3	0.2	0	0
	80	0	0.3	5.0	0.1	0.1	0	0
	91	0	1.4	6.6	0.2	0.0	0	0
	92	0	1.5	3.4	0.1	0.2	0	0
600 mg/kg/day	93	0	0.6	3.0	0.2	0.1	0	0
High	94	0	0.2	3.1	0.2	0.0	0	0
Recovery	95	0	0.2	5.6	0.4	0.0	0	0
	96	0	0.5	2.8	0.1	0.1	0	0
	97	0	0.7	2.5	0.3	0.0	0	0
	98	0	0.6	3.0	0.2	0.0	0	0
	99	0	0.5	4.0	0.0	0.0	0	0
	100	0	0.4	3.0	0.1	0.0	0	0

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 17

Individual Absolute Organ Weights (g) - Males

Treatment	Animal Number	ADR	BRN	KID	LIV	LNG	TESTES
	1	0.065	2.21	4.14	18.62	2.73	4.57
	2	0.046	2.14	3.64	18.01	2.34	4.37
	3	0.063	2.23	3.60	18.01	2.22	4.14
	4	0.059	2.25	4.22	20.15	2.52	4.47
0 mg/kg/day	5	0.050	2.27	4.40	20.77	1.91	4.38
Vehicle	6	0.072	2.19	4.18	22.21	2.23	3.87
Control	7	0.059	2.31	3.40	18.46	1.90	3.69
	8	0.059	2.41	3.73	17.75	1.85	4.00
	9	0.065	2.25	4.05	16.93	1.90	3.90
	10	0.083	2.22	3.79	21.89	2.31	4.13
	21	0.055	2.45	4.21	22.81	2.26	4.27
	22	0.065	2.17	4.22	18.20	2.13	4.00
	23	0.054	2.18	4.01	20.22	2.45	4.07
	24	0.065	2.28	4.05	23.78	1.76	4.08
50 mg/kg/day	25	0.037	2.28	4.06	18.10	2.60	4.45
Low	26	0.058	2.38	3.62	18.05	2.24	2.36
	27	0.072	2.24	3.84	16.22	2.01	3.71
	28	0.048	2.22	3.79	16.43	1.94	3.45
	29	0.090	2.34	4.22	21.27	2.58	3.98
	30	0.050	2.22	3.47	14.06	1.89	3.46
	41	--[a]	--	--	--	--	--
	42	0.056	2.08	4.32	21.17	2.31	3.79
	43	0.051	2.27	3.81	18.79	1.99	4.48
	44	0.057	2.27	4.57	16.46	2.28	4.21
200 mg/kg/day	45	0.054	2.23	3.64	17.03	2.10	4.25
Mid	46	0.044	2.05	4.21	20.26	2.25	4.25
	47	0.079	2.28	4.63	18.86	2.30	3.68
	48	0.067	2.27	4.16	17.89	2.39	3.51
	49	0.045	2.27	2.80	12.61	2.07	4.34
	50	0.065	2.31	4.75	22.36	2.12	3.87

[a]-- = accidental death; no data

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 17 (cont.)

Individual Absolute Organ Weights (g) - Males

Treatment	Animal Number	ADR	BRN	KID	LIV	LNG	TESTES
	61	0.052	2.20	3.75	18.69	2.16	3.53
	62	0.052	2.21	4.22	21.85	2.18	4.02
	63	0.061	2.29	3.76	17.26	2.14	4.33
	64	0.060	2.22	4.88	28.27	2.01	4.03
600 mg/kg/day	65	0.071	2.28	4.06	22.47	2.27	3.90
High	66	0.070	2.24	4.25	18.91	1.81	3.95
	67	0.055	2.11	3.41	17.25	1.90	4.21
	68	0.058	2.08	3.97	19.99	1.98	4.11
	69	0.081	2.05	4.49	23.09	1.93	3.69
	70	0.073	2.25	4.76	21.18	2.25	4.26
	81	0.062	2.33	4.95	19.18	1.92	3.58
	82	0.048	2.23	3.32	13.70	1.95	4.26
	83	0.066	2.08	3.74	17.94	2.47	3.82
600 mg/kg/day	84	0.054	2.24	3.48	15.24	1.70	2.39
High	85	0.062	2.41	4.92	19.30	2.20	3.86
Recovery	86	0.066	2.12	4.02	20.21	1.93	3.92
	87	0.061	2.39	4.58	18.78	2.25	4.20
	88	0.054	2.18	4.06	16.01	1.80	4.02
	89	0.076	2.29	4.44	18.47	2.14	4.58
	90	0.055	2.16	3.89	14.92	2.00	4.43

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 17 (cont.)

Individual Absolute Organ Weights (g) - Females

Treatment	Animal Number	ADR	BRN	KID	LIV	LNG	OVARIES
	11	0.074	1.92	2.83	10.87	1.44	0.166
	12	0.073	2.10	2.65	9.38	1.86	0.104
	13	0.075	2.18	2.13	9.66	1.73	0.125
0 mg/kg/day	14	0.080	2.09	2.73	12.83	1.53	0.141
Vehicle	15	0.085	2.08	1.87	7.09	1.47	0.112
Control	16	0.070	2.00	2.03	8.22	1.73	0.121
	17	0.077	1.95	2.34	9.05	1.71	0.090
	18	0.061	2.06	2.15	8.39	1.86	0.127
	19	0.085	2.13	2.37	10.23	1.69	0.154
	20	0.073	2.06	2.34	8.67	1.30	0.135
	31	0.093	2.15	2.39	8.70	1.68	0.092
	32	0.082	2.13	2.07	8.74	1.85	0.107
	33	0.075	2.17	2.23	9.28	1.85	0.114
	34	0.071	1.91	1.95	8.97	1.65	0.118
50 mg/kg/day	35	0.085	2.08	2.30	9.58	1.53	0.224
Low	36	0.059	2.01	2.34	9.24	1.83	0.108
	37	0.069	2.05	1.94	8.22	1.52	0.088
	38	0.076	1.98	2.11	8.17	1.65	0.136
	39	0.098	2.11	2.70	10.80	1.88	0.133
	40	0.069	2.01	2.26	9.63	1.86	0.109
	51	0.076	2.00	2.56	10.36	1.62	0.125
	52	0.089	2.13	2.47	10.40	1.82	0.092
	53	0.108	2.21	2.41	10.13	1.61	0.202
	54	0.066	2.24	2.20	9.32	1.60	0.131
200 mg/kg/day	55	0.082	2.17	2.37	9.59	1.73	0.113
Mid	56	0.083	2.06	2.30	8.61	1.55	0.146
	57	0.090	2.13	2.41	10.45	1.49	0.169
	58	0.069	2.06	2.20	8.83	1.65	0.096
	59	0.098	1.95	2.44	11.37	1.80	0.061
	60	0.089	2.19	2.44	11.46	1.70	0.086

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 17 (cont.)

Individual Absolute Organ Weights (g) - Females

Treatment	Animal Number	ADR	BRN	KID	LIV	LNG	OVARIES
	799	0.086	2.07	2.59	12.12	1.56	0.185
	72	0.114	2.16	2.50	11.06	1.73	0.236
	73	0.090	2.05	2.79	12.46	1.55	0.059
	74	0.081	2.02	2.71	13.10	1.54	0.128
600 mg/kg/day	75	0.072	2.08	2.57	11.54	1.47	0.150
High	76	0.064	2.06	2.05	9.44	1.47	0.103
	77	0.068	1.99	2.22	9.79	1.53	0.068
	78	0.089	2.04	2.92	13.33	1.97	0.158
	79	0.067	2.04	2.39	13.72	1.57	0.126
	80	0.088	2.13	2.37	11.25	1.58	0.211
	91	0.090	2.14	2.81	12.24	1.52	0.153
	92	0.086	2.12	2.29	8.51	1.88	0.169
	93	0.059	2.07	2.00	7.40	1.60	0.107
600 mg/kg/day	94	0.085	2.07	2.60	10.37	1.39	0.062[a]
High	95	0.066	2.10	2.27	9.42	1.64	0.139
Recovery	96	0.085	2.22	2.32	10.15	1.65	0.155
	97	0.091	2.17	2.54	11.25	1.67	0.110
	98	0.080	2.04	2.56	9.93	1.48	0.218
	99	0.086	2.11	2.28	9.25	1.75	0.119
	100	0.113	2.03	2.09	8.53	1.70	0.116

[a] Weight of one ovary only; one ovary lost at necropsy; value not included in calculation of group mean

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 18

Individual Relative[a] Organ Weights - Males

Treatment	Animal Number	FBW[b]	ADR	BRN	KID	LIV	LNG	TESTES
	1	619	0.011	0.36	0.67	3.01	0.44	0.74
	2	598	0.008	0.36	0.61	3.01	0.39	0.73
	3	542	0.012	0.41	0.66	3.32	0.41	0.76
0 mg/kg/day	4	603	0.010	0.37	0.70	3.34	0.42	0.74
Vehicle	5	621	0.008	0.37	0.71	3.34	0.31	0.71
Control	6	662	0.011	0.33	0.63	3.35	0.34	0.58
	7	549	0.011	0.42	0.62	3.36	0.35	0.67
	8	581	0.010	0.41	0.64	3.06	0.32	0.69
	9	561	0.012	0.40	0.72	3.02	0.34	0.70
	10	683	0.012	0.33	0.55	3.20	0.34	0.60
	21	622	0.009	0.39	0.68	3.67	0.36	0.69
	22	539	0.012	0.40	0.78	3.38	0.40	0.74
	23	567	0.010	0.38	0.71	3.57	0.43	0.72
	24	658	0.010	0.35	0.62	3.61	0.27	0.62
50 mg/kg/day	25	562	0.007	0.41	0.72	3.22	0.46	0.79
Low	26	543	0.011	0.44	0.67	3.32	0.41	0.43
	27	564	0.013	0.40	0.68	2.88	0.36	0.66
	28	550	0.009	0.40	0.69	2.99	0.35	0.63
	29	711	0.013	0.33	0.59	2.99	0.36	0.56
	30	523	0.010	0.42	0.66	2.69	0.36	0.66
	41	--[c]	--	--	--	--	--	--
	42	646	0.009	0.32	0.67	3.28	0.36	0.59
	43	529	0.010	0.43	0.72	3.55	0.38	0.85
	44	601	0.009	0.38	0.76	2.74	0.38	0.70
200 mg/kg/day	45	564	0.010	0.40	0.65	3.02	0.37	0.75
Mid	46	577	0.008	0.36	0.73	3.51	0.39	0.74
	47	563	0.014	0.40	0.82	3.35	0.41	0.65
	48	561	0.012	0.40	0.74	3.19	0.43	0.63
	49	523	0.009	0.43	0.54	2.41	0.40	0.83
	50	618	0.011	0.37	0.77	3.62	0.34	0.63

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] Fasted Body Weight (g)
[c] -- = accidental death; no data

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 18 (cont.)

Individual Relative[a] Organ Weights - Males

Treatment	Animal Number	FBW[b]	ADR	BRN	KID	LIV	LNG	TESTES
	61	531	0.010	0.41	0.71	3.52	0.41	0.66
	62	542	0.010	0.41	0.78	4.03	0.40	0.74
	63	527	0.012	0.43	0.71	3.28	0.41	0.82
	64	658	0.009	0.34	0.74	4.30	0.31	0.61
600 mg/kg/day	65	606	0.012	0.38	0.67	3.71	0.37	0.64
High	66	530	0.013	0.42	0.80	3.57	0.34	0.75
	67	490	0.011	0.43	0.70	3.52	0.39	0.86
	68	528	0.011	0.39	0.75	3.79	0.38	0.78
	69	614	0.013	0.33	0.73	3.76	0.31	0.60
	70	589	0.012	0.38	0.81	3.60	0.38	0.72
	81	509	0.011	0.41	0.71	3.37	0.34	0.63
	82	472	0.010	0.47	0.70	2.90	0.41	0.90
	83	585	0.011	0.36	0.64	3.07	0.42	0.65
600 mg/kg/day	84	552	0.010	0.41	0.63	2.76	0.31	0.43
High	85	719	0.009	0.34	0.68	2.68	0.31	0.54
Recovery	86	594	0.011	0.36	0.68	3.40	0.32	0.66
	87	718	0.008	0.33	0.64	2.62	0.31	0.58
	88	538	0.010	0.41	0.75	2.98	0.33	0.75
	89	668	0.011	0.34	0.66	2.76	0.32	0.69
	90	537	0.010	0.40	0.72	2.78	0.37	0.82

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] Fasted Body Weight (g)

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 18 (cont.)

Individual Relative[a] Organ Weights - Females

Treatment	Animal Number	FBW[b]	ADR	BRN	KID	LIV	LNG	OVARIES
	11	354	0.021	0.54	0.80	3.07	0.41	0.047
	12	314	0.023	0.67	0.84	2.99	0.59	0.033
	13	298	0.025	0.73	0.71	3.24	0.58	0.042
0 mg/kg/day	14	334	0.024	0.63	0.82	3.84	0.46	0.042
Vehicle	15	264	0.032	0.79	0.71	2.69	0.56	0.042
Control	16	307	0.023	0.65	0.66	2.68	0.56	0.039
	17	310	0.025	0.63	0.75	2.92	0.55	0.029
	18	306	0.020	0.67	0.70	2.74	0.61	0.042
	19	301	0.028	0.71	0.79	3.40	0.56	0.051
	20	303	0.024	0.68	0.77	2.86	0.43	0.045
	31	320	0.029	0.67	0.75	2.72	0.53	0.029
	32	291	0.028	0.73	0.71	3.00	0.64	0.037
	33	294	0.026	0.74	0.76	3.16	0.63	0.039
	34	305	0.023	0.63	0.64	2.94	0.54	0.039
50 mg/kg/day	35	283	0.030	0.73	0.81	3.39	0.54	0.079
Low	36	372	0.016	0.54	0.63	2.48	0.49	0.029
	37	321	0.021	0.64	0.60	2.56	0.47	0.027
	38	282	0.027	0.70	0.75	2.90	0.59	0.048
	39	322	0.030	0.66	0.84	3.35	0.58	0.041
	40	381	0.018	0.53	0.59	2.53	0.49	0.029
	51	357	0.021	0.56	0.72	2.90	0.45	0.035
	52	316	0.028	0.67	0.78	3.29	0.58	0.029
	53	306	0.035	0.72	0.79	3.31	0.53	0.066
	54	343	0.019	0.65	0.64	2.72	0.47	0.038
200 mg/kg/day	55	308	0.027	0.70	0.77	3.11	0.56	0.037
Mid	56	295	0.028	0.70	0.78	2.92	0.53	0.049
	57	326	0.028	0.65	0.74	3.21	0.46	0.052
	58	303	0.023	0.68	0.73	2.91	0.54	0.032
	59	301	0.033	0.65	0.81	3.78	0.60	0.020
	60	306	0.029	0.72	0.80	3.75	0.56	0.028

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] Fasted Body Weight (g)

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

APPENDIX 18 (cont.)

Individual Relative[a] Organ Weights - Females

Treatment	Animal Number	FBW[b]	ADR	BRN	KID	LIV	LNG	OVARIES
	799	316	0.027	0.66	0.82	3.84	0.49	0.059
	72	313	0.036	0.69	0.80	3.53	0.55	0.075
	73	309	0.029	0.66	0.90	4.03	0.50	0.019
	74	310	0.026	0.65	0.87	4.23	0.50	0.041
600 mg/kg/day	75	305	0.024	0.68	0.84	3.78	0.48	0.049
High	76	251	0.025	0.82	0.82	3.76	0.59	0.041
	77	274	0.025	0.73	0.81	3.57	0.56	0.025
	78	342	0.026	0.60	0.85	3.90	0.58	0.046
	79	346	0.019	0.59	0.69	3.97	0.45	0.036
	80	313	0.028	0.68	0.76	3.59	0.50	0.067
	91	370	0.024	0.58	0.76	3.31	0.41	0.036
	92	297	0.029	0.71	0.77	2.87	0.63	0.057
	93	292	0.020	0.71	0.68	2.53	0.55	0.037
600 mg/kg/day	94	351	0.024	0.59	0.74	2.95	0.40	0.018[c]
High	95	329	0.020	0.64	0.69	2.86	0.50	0.042
Recovery	96	330	0.026	0.67	0.70	3.08	0.50	0.050
	97	397	0.023	0.53	0.64	2.83	0.42	0.028
	98	362	0.022	0.56	0.71	2.74	0.41	0.060
	99	325	0.026	0.65	0.70	2.85	0.54	0.037
	100	306	0.037	0.66	0.68	2.79	0.56	0.038

[a] Relative Organ Weight = [Absolute Organ Weight (g) ÷ Fasted Body Weight (g)] x 100
[b] Fasted Body Weight (g)
[c] Weight for one ovary only; one ovary lost at necropsy; value not included in calculation of group mean

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APPENDIX 19

PATHOLOGY REPORT

FINAL PATHOLOGY REPORT FOR 90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP IITRI PROJECT NUMBER L08512, STUDY NUMBER 2

PREPARED
BY
PATHOLOGY ASSOCIATES, INC.
2201 WEST CAMPBELL PARK DRIVE, SUITE 327
CHICAGO, IL 60612

FOR
IIT RESEARCH INSTITUTE
10 WEST 35TH STREET
CHICAGO, IL 60616

MAY 8, 1995

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SECTION I

PATHOLOGY NARRATIVE

FINAL PATHOLOGY REPORT

90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP

INTRODUCTION

This pathology report, submitted by Pathology Associates, Inc. (PAI) to IIT Research Institute (IITRI), represents the histopathology findings for the study designated as "90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group", IITRI Project Number L08512, Study Number 2.

EXPERIMENTAL DESIGN AND METHODS

Three groups, each composed of 10 male and 10 female Sprague-Dawley CD® rats, received the test article by oral gavage, once daily, 5 days/week for a minimum of 90 days. Concentrations of the test article were 50, 200, and 600 mg/kg/day (see Table I, Summary of Experimental Design). Additionally, one group of 10 male and 10 female Sprague-Dawley CD® rats was included as a control group and was administered the vehicle only. Also, one recovery group of 10 male and 10 female Sprague-Dawley CD® rats was given test article (600 mg/kg/day) for at least 90 days and sacrificed after at least a 28 day recovery period. Animal number 41 died accidentally due to gavage error and only lung was evaluated histopathologically. All scheduled sacrifice animals were necropsied by PAI personnel. Protocol-required tissues (see Table II, Protocol-Required Tissues: Necropsy) were collected and fixed in 10% neutral buffered formalin. Tissues for histopathology (see Table III, Protocol-Required Tissues: Histopathology) were trimmed and processed, and slides were prepared in accordance with PAI Standard Operating Procedures. These tissues, except for those not present in wet tissue or unavailable due to loss in slide preparation or due to inherent difficulty in obtaining them in section (e.g. parathyroid gland), were evaluated by light microscopy. Histopathologic observations were then tabulated. Based on these findings, no target tissues were identified. Therefore, no tissues from the recovery group were evaluated.

Microscopic findings for all groups are summarized in the Project Summary Tables (Section II). The mean group severity scores are found in the Severity Summary Tables (Section III). The mean group severity scores were determined by dividing the sum of all severity scores for a finding by the number of tissues examined. Microscopic findings in the protocol-required tissues for individual animals are presented in the Tabulated Animal Data Tables (Section IV). The correlation of the necropsy findings and histopathology findings are reported in the Correlation of Gross and Microscopic (Micro) Findings (Section V). The codes used as entries in these tables are explained in the Report Codes Table.

RESULTS AND DISCUSSION

The Results and Discussion section is divided into two parts: Diagnostic Terms and Histopathology Findings. The Diagnostic Terms portion lists and clarifies diagnostic terminology that may be unclear. Terms listed in the Diagnostic Terms portion of this section were not

necessarily considered to be test article-related. The Histopathology Findings portion of this section reports the results and provides discussion of the histopathologic evaluation of the tissues.

Diagnostic Terms

All of the diagnoses used in this study were considered to be self-explanatory background findings and thus were not discussed in this section.

Histopathology Findings

All histopathology findings in this study were interpreted as incidental findings that are typically present in control animals in studies using Sprague-Dawley CD® rats.

Minimal centrilobular hypertrophy of liver was observed in high dose (600 mg/kg/day) male (10 of 10) and female (3 of 10) animals in an earlier 14 day oral gavage study of the same test article (Project Number L08512, Study Number 1), but was not apparent in this 90 day oral gavage study. The absence of this change (centrilobular hypertrophy) in the 90 day study is most likely due to the 90 day study duration, which allows time for more complete enzyme adaptation to chemical exposure.

CONCLUSIONS

Under the conditions of this study, administration of the test article, 1,3,5-trimethylbenzene, by oral gavage for a minimum of 90 days was not associated with any adverse toxic effects.

Robert L. Morrissey

Robert L. Morrissey, DVM, Ph.D.
Diplomate, ACVP

5/8/95
Date

TABLE I

SUMMARY OF EXPERIMENTAL DESIGN

Dose Group	Dose Level (mg/kg/day)	Core Male	Core Female	28-Day Recovery Male	28-Day Recovery Female
Control	0	10	10	--	--
Low	50	10	10	--	--
Mid	200	10	10	--	--
High	600	10	10	10	10

TABLE II

PROTOCOL-REQUIRED TISSUES:
NECROPSY

Adrenal glands
Aorta
Brain (with medulla/pons; cerebellum and cortex)
Epididymides
Esophagus
Exorbital lacrimal glands
Eyes
Femur
Heart
Intestine
- Cecum
- Colon
- Duodenum
- Ileum
- Jejunum
- Rectum

Kidneys
Liver
Lungs with bronchi
Lymph node (mesenteric)
Mammary gland
Nasal turbinates
Ovaries
Pancreas
Parathyroids
Pituitary gland
Prostate
Salivary glands
Sciatic nerve
Seminal vesicles
Skeletal muscle (thigh)
Skin
Spinal cord (3 levels)
Spleen
Sternum (with bone marrow)
Stomach
Testes
Thymus
Thyroid gland
Trachea
Urinary bladder
Uterus
Zymbal glands
Gross lesions

TABLE III

PROTOCOL-REQUIRED TISSUES:
HISTOPATHOLOGY

Adrenals
Aorta
Brain (with medulla/pons; cerebellum and cortex)
Cecum
Colon
Duodenum
Esophagus
Heart
Ileum
Jejunum
Kidneys
Liver
Lungs with bronchi
Lymph node (mesenteric)
Nasal turbinates
Ovaries
Pancreas
Pituitary gland
Rectum
Salivary glands
Sciatic nerve
Spleen
Sternum (bone marrow)
Stomach
Testes
Thymus
Thyroid (with parathyroids)
Trachea
Urinary bladder
Uterus
Gross lesions

All tissues listed above evaluated in control and 600 mg/kg/day (non-recovery) dose groups. Lungs and gross lesions were also evaluated in the 50 mg/kg/day and 200 mg/kg/day dose groups.

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IITRI PROJECT NUMBER L08512, STUDY NUMBER 2

Report Codes Table

A. Codes applying to organs

N	Tissues within normal histological limits
A	Autolysis precluding adequate evaluation
O	Paired organ missing
U	Tissues unsuitable for complete evaluation
S	Tissues not applicable to animal
R	Recut
*	Tissues not required by protocol

B. Codes applying to microscopic diagnoses

1	minimal
2	mild
3	moderate
4	marked
( )	focal
[ ]	diffuse
< >	multifocal
P	Present
B	Neoplasm, benign
M	Neoplasm, malignant without metastasis
C	Neoplasm, malignant with metastasis
X	Metastatic site (÷)
I	Bilateral
L	Unilateral
-	No data entered

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SECTION II

PROJECT SUMMARY TABLE

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: MALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
BRAIN	# EX	10		0		0		10	
PITUITARY GLAND	# EX	10		0		0		10	
THYMUS	# EX	10		0		0		10	
Hemorrhage		0	0.0	0	0.0	0	0.0	1	10.0
SALIVARY GLAND	# EX	10		0		0		10	
PANCREAS	# EX	10		0		0		10	
Atrophy		2	20.0	0	0.0	0	0.0	0	0.0
Inflammation, chronic		0	0.0	0	0.0	0	0.0	1	10.0
Inflammation, chronic-active		0	0.0	0	0.0	0	0.0	1	10.0
ADRENAL GLAND	# EX	10		1		0		10	
Necrosis, coagulation		0	0.0	1	100.0	0	0.0	0	0.0
TRACHEA	# EX	10		0		0		10	
THYROID GLAND	# EX	10		0		0		10	
PARATHYROID GLAND	# EX	9		0		0		8	
ESOPHAGUS	# EX	10		0		0		10	
HEART	# EX	10		0		0		10	
Cardiomyopathy		3	30.0	0	0.0	0	0.0	2	20.0
AORTA	# EX	10		0		0		10	

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: MALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
COLON	# EX	10		0		0		10	
DUODENUM	# EX	10		0		0		10	
STOMACH	# EX	10		0		0		10	
LIVER	# EX	10		0		0		10	
Inflammation, chronic		4	40.0	0	0.0	0	0.0	3	30.0
SPLEEN	# EX	10		0		0		10	
Erythropoiesis		0	0.0	0	0.0	0	0.0	1	10.0
JEJUNUM	# EX	10		0		0		10	
LUNG	# EX	10		10		10		10	
Inflammation, chronic, interstitium		0	0.0	1	10.0	0	0.0	0	0.0
Inflammation, chronic, perivascular		0	0.0	1	10.0	0	0.0	0	0.0
KIDNEY	# EX	10		0		0		10	
Inflammation, chronic		1	10.0	0	0.0	0	0.0	0	0.0
Nephropathy		3	30.0	0	0.0	0	0.0	1	10.0
Hemorrhage		0	0.0	0	0.0	0	0.0	1	10.0
URINARY BLADDER	# EX	10		0		0		10	
LYMPH NODE, MESENTERIC	# EX	10		0		0		10	
Hemorrhage		1	10.0	0	0.0	0	0.0	1	10.0
ILEUM	# EX	10		0		0		10	

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
2,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: MALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
CECUM	# EX	10		0		1		10	
Necrosis, focal		0	0.0	0	0.0	1	100.0	0	0.0
Hemorrhage, focal		0	0.0	0	0.0	1	100.0	0	0.0
RECTUM	# EX	10		0		0		10	
SCIATIC NERVE	# EX	10		0		0		10	
TESTES	# EX	10		1		0		10	
Atrophy		0	0.0	1	100.0	0	0.0	0	0.0
Infiltration, stromal fat		0	0.0	1	100.0	0	0.0	0	0.0
STERNUM	# EX	10		0		0		10	
BONE MARROW	# EX	10		0		0		10	
NASAL TURBINATES	# EX	10		0		0		10	
Ulceration, palate		1	10.0	0	0.0	0	0.0	0	0.0
Inflammation, acute		0	0.0	0	0.0	0	0.0	1	10.0
LYMPH NODE, MANDIBULAR	# EX	1		0		1		0	
Accumulation, plasma cell		1	100.0	0	0.0	0	0.0	0	0.0
Hemorrhage		0	0.0	0	0.0	1	100.0	0	0.0

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: FEMALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
BRAIN	# EX	10		0		0		10	
PITUITARY GLAND	# EX	9		0		0		10	
THYMUS	# EX	10		1		0		10	
Hemorrhage		1	10.0	1	100.0	0	0.0	0	0.0
SALIVARY GLAND	# EX	10		0		0		10	
PANCREAS	# EX	10		0		0		10	
Atrophy		2	20.0	0	0.0	0	0.0	0	0.0
Inflammation, chronic		1	10.0	0	0.0	0	0.0	0	0.0
ADRENAL GLAND	# EX	10		0		0		10	
TRACHEA	# EX	10		0		0		10	
THYROID GLAND	# EX	10		0		0		10	
PARATHYROID GLAND	# EX	9		0		0		7	
ESOPHAGUS	# EX	10		0		0		10	
HEART	# EX	10		0		0		10	
Cardiomyopathy		0	0.0	0	0.0	0	0.0	1	10.0
AORTA	# EX	10		0		0		10	
COLON	# EX	10		0		0		10	

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L08512

SEX: FEMALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
DUODENUM	# EX	10		0		0		10	
STOMACH	# EX	10		0		0		10	
LIVER	# EX	10		0		0		10	
Inflammation, chronic		5	50.0	0	0.0	0	0.0	5	50.0
Inflammation, chronic-active		1	10.0	0	0.0	0	0.0	0	0.0
Necrosis		1	10.0	0	0.0	0	0.0	0	0.0
SPLEEN	# EX	10		0		0		10	
Erythropoiesis		1	10.0	0	0.0	0	0.0	0	0.0
JEJUNUM	# EX	10		0		0		10	
LUNG	# EX	10		10		10		10	
Inflammation, chronic, interstitium		2	20.0	3	30.0	0	0.0	1	10.0
KIDNEY	# EX	10		0		0		10	
Mineralization		7	70.0	0	0.0	0	0.0	7	70.0
URINARY BLADDER	# EX	10		0		0		10	
LYMPH NODE, MESENTERIC	# EX	10		0		0		10	
ILEUM	# EX	10		0		0		10	
CECUM	# EX	10		0		0		10	
RECTUM	# EX	10		0		0		10	

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

PROJECT SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental, Scheduled sacrifice

STUDY NUMBER: L085122

SEX: FEMALE

INCIDENCE OF NEOPLASTIC and NON-NEOPLASTIC MICROSCOPIC FINDINGS

GROUP:		CONTROL (1)		LOW DOSE (2)		MID DOSE (3)		HIGH DOSE (4)	
NUMBER OF ANIMALS:		10		10		10		10	
		#	%	#	%	#	%	#	%
SCIATIC NERVE	# EX	9		0		0		10	
OVARY	# EX	10		0		0		10	
UTERUS	# EX	10		0		0		10	
STERNUM	# EX	10		0		0		10	
BONE MARROW	# EX	10		0		0		10	
NASAL TURBINATES	# EX	10		0		0		10	
Inflammation, acute		1	10.0	0	0.0	0	0.0	0	0.0
Metaplasia, squamous		1	10.0	0	0.0	0	0.0	0	0.0
LYMPH NODE, MANDIBULAR	# EX	1		0		0		0	
Accumulation, plasma cell		1	100.0	0	0.0	0	0.0	0	0.0
Hemorrhage		1	100.0	0	0.0	0	0.0	0	0.0
Hyperplasia, lymphoid		1	100.0	0	0.0	0	0.0	0	0.0
BONE	# EX	1		0		0		0	
Fracture		1	100.0	0	0.0	0	0.0	0	0.0
EYE	# EX	0		1		1		0	
Atrophy, retina		0	0.0	1	100.0	1	100.0	0	0.0
Inflammation, chronic, retina		0	0.0	1	100.0	0	0.0	0	0.0
Cataract		0	0.0	1	100.0	1	100.0	0	0.0

Incidence Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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SECTION III

SEVERITY SUMMARY TABLE

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: MALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
BRAIN	# EX	10	0	0	10
PITUITARY GLAND	# EX	10	0	0	10
THYMUS	# EX	10	0	0	10
Hemorrhage		0 0.00	0 0.00	0 0.00	1 0.20
SALIVARY GLAND	# EX	10	0	0	10
PANCREAS	# EX	10	0	0	10
Atrophy		2 0.20	0 0.00	0 0.00	0 0.00
Inflammation, chronic		0 0.00	0 0.00	0 0.00	1 0.10
Inflammation, chronic-active		0 0.00	0 0.00	0 0.00	3 0.30
ADRENAL GLAND	# EX	10	1	0	10
Necrosis, coagulation		0 0.00	1 3.00	0 0.00	0 0.00
TRACHEA	# EX	10	0	0	10
THYROID GLAND	# EX	10	0	0	10
PARATHYROID GLAND	# EX	9	0	0	8
ESOPHAGUS	# EX	10	0	0	10
HEART	# EX	10	0	0	10
Cardiomyopathy		3 0.30	0 0.00	0 0.00	2 0.20
AORTA	# EX	10	0	0	10
COLON	# EX	10	0	0	10

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L985122

SEX: MALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
DUODENUM	# EX	10	0	0	10
STOMACH	# EX	10	0	0	10
LIVER	# EX	10	0	0	10
Inflammation, chronic		4 0.40	0 0.00	0 0.00	3 0.30
SPLEEN	# EX	10	0	0	10
Erythropoiesis		0 0.00	0 0.00	0 0.00	1 0.10
JEJUNUM	# EX	10	0	0	10
LUNG	# EX	10	10	10	10
Inflammation, chronic, interstitium		0 0.00	1 0.20	0 0.00	0 0.00
Inflammation, chronic, perivascular		0 0.00	1 0.10	0 0.00	0 0.00
KIDNEY	# EX	10	0	0	10
Inflammation, chronic		1 0.10	0 0.00	0 0.00	0 0.00
Nephropathy		3 0.30	0 0.00	0 0.00	1 0.10
Hemorrhage		0 0.00	0 0.00	0 0.00	1 0.20
URINARY BLADDER	# EX	10	0	0	10
LYMPH NODE, MESENTERIC	# EX	10	0	0	10
Hemorrhage		1 0.10	0 0.00	0 0.00	1 0.10
ILEUM	# EX	10	0	0	10
CECUM	# EX	10	0	1	10
Necrosis, focal		0 0.00	0 0.00	1 2.00	0 0.00
Hemorrhage, focal		0 0.00	0 0.00	1 2.00	0 0.00

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2 STUDY NUMBER: L08512

FATE: Accidental,Scheduled sacrifice

SEX: MALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
RECTUM	# EX	10	0	0	10
SCIATIC NERVE	# EX	10	0	0	10
TESTES	# EX	10	1	0	10
Atrophy		0 0.00	1 4.00	0 0.00	0 0.00
Infiltration, stromal fat		0 0.00	1 4.00	0 0.00	0 0.00
STERNUM	# EX	10	0	0	10
BONE MARROW	# EX	10	0	0	10
NASAL TURBINATES	# EX	10	0	0	10
Ulceration, palate		1 0.30	0 0.00	0 0.00	0 0.00
Inflammation, acute		0 0.00	0 0.00	0 0.00	1 0.10
LYMPH NODE, MANDIBULAR	# EX	1	0	1	0
Accumulation, plasma cell		1 3.00	0 0.00	0 0.00	0 0.00
Hemorrhage		0 0.00	0 0.00	1 2.00	0 0.00

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: FEMALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
BRAIN	# EX	10	0	0	10
PITUITARY GLAND	# EX	9	0	0	10
THYMUS	# EX	10	1	0	10
Hemorrhage		1 0.10	1 1.00	0 0.00	0 0.00
SALIVARY GLAND	# EX	10	0	0	10
PANCREAS	# EX	10	0	0	10
Atrophy		2 0.20	0 0.00	0 0.00	0 0.00
Inflammation, chronic		1 0.10	0 0.00	0 0.00	0 0.00
ADRENAL GLAND	# EX	10	0	0	10
TRACHEA	# EX	10	0	0	10
THYROID GLAND	# EX	10	0	0	10
PARATHYROID GLAND	# EX	9	0	0	7
ESOPHAGUS	# EX	10	0	0	10
HEART	# EX	10	0	0	10
Cardiomyopathy		0 0.00	0 0.00	0 0.00	1 0.10
AORTA	# EX	10	0	0	10
COLON	# EX	10	0	0	10
DUODENUM	# EX	10	0	0	10

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: FEMALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
STOMACH	# EX	10	0	0	10
LIVER	# EX	10	0	0	10
Inflammation, chronic		5 0.50	0 0.00	0 0.00	5 0.60
Inflammation, chronic-active		1 0.10	0 0.00	0 0.00	0 0.00
Necrosis		1 0.10	0 0.00	0 0.00	0 0.00
SPLEEN	# EX	10	0	0	10
Erythropoiesis		1 0.10	0 0.00	0 0.00	0 0.00
JEJUNUM	# EX	10	0	0	10
LUNG	# EX	10	10	10	10
Inflammation, chronic, interstitium		2 0.20	3 0.40	0 0.00	1 0.10
KIDNEY	# EX	10	0	0	10
Mineralization		7 0.80	0 0.00	0 0.00	7 0.70
URINARY BLADDER	# EX	10	0	0	10
LYMPH NODE, MESENTERIC	# EX	10	0	0	10
ILEUM	# EX	10	0	0	10
CECUM	# EX	10	0	0	10
RECTUM	# EX	10	0	0	10
SCIATIC NERVE	# EX	9	0	0	10
OVARY	# EX	10	0	0	10

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

SEVERITY SUMMARY

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122

SEX: FEMALE

GROUP:		CONTROL (1)	LOW DOSE (2)	MID DOSE (3)	HIGH DOSE (4)
NUMBER OF ANIMALS:		10	10	10	10
		# SEV	# SEV	# SEV	# SEV
UTERUS	# EX	10	0	0	10
STERNUM	# EX	10	0	0	10
BONE MARROW	# EX	10	0	0	10
NASAL TURBINATES	# EX	10	0	0	10
Inflammation, acute		1 0.10	0 0.00	0 0.00	0 0.00
Metaplasia, squamous		1 0.20	0 0.00	0 0.00	0 0.00
LYMPH NODE, MANDIBULAR	# EX	1	0	0	0
Accumulation, plasma cell		1 2.00	0 0.00	0 0.00	0 0.00
Hemorrhage		1 3.00	0 0.00	0 0.00	0 0.00
Hyperplasia, lymphoid		1 2.00	0 0.00	0 0.00	0 0.00
BONE	# EX	1	0	0	0
Fracture		1 4.00	0 0.00	0 0.00	0 0.00
EYE	# EX	0	1	1	0
Atrophy, retina		0 0.00	1 4.00	1 4.00	0 0.00
Inflammation, chronic, retina		0 0.00	1 2.00	0 0.00	0 0.00
Cataract		0 0.00	1 2.00	1 3.00	0 0.00

Severity Calculated by No. of Tissues Scored
(1) - 0 mg/kg
(2) - 50 mg/kg
(3) - 200 mg/kg
(4) - 600 mg/kg

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SECTION IV

TABULATED ANIMAL DATA

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: MALE

ANIMAL ID:	001	002	003	004	005	006	007	008	009	010
BRAIN	N	N	N	N	N	N	N	N	N	N
PITUITARY GLAND	N	N	N	N	N	N	N	N	N	N
THYMUS	N	N	N	N	N	N	N	N	N	N
SALIVARY GLAND	N	N	N	N	N	N	N	N	N	N
PANCREAS	N	N	N	N	N	N	N		N	
Atrophy	–	–	–	–	–	–	–	1	–	1
ADRENAL GLAND	N	N	N	N	N	N	N	N	N	N
TRACHEA	N	N	N	N	N	N	N	N	N	N
THYROID GLAND	N	N	N	N	N	N	N	N	N	N
PARATHYROID GLAND	N	N	N	U	N	N	N	N	N	N
ESOPHAGUS	N	N	N	N	N	N	N	N	N	N
HEART	N	N	N			N	N		N	N
Cardiomyopathy	–	–	–	1	1	–	–	1	–	–
AORTA	N	N	N	N	N	N	N	N	N	N
COLON	N	N	N	N	N	N	N	N	N	N
DUODENUM	N	N	N	N	N	N	N	N	N	N
STOMACH	N	N	N	N	N	N	N	N	N	N
LIVER	N	N		N		N	N	N		

See Reports Code Table for Symbol Definitions

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: MALE

ANIMAL ID:	001	002	003	004	005	006	007	008	009	010
LIVER	N	N		N		N	N	N		
Inflammation, chronic	-	-	1	-	1	-	-	-	1	1
SPLEEN	N	N	N	N	N	N	N	N	N	N
JEJUNUM	N	N	N	N	N	N	N	N	N	N
LUNG	N	N	N	N	N	N	N	N	N	N
KIDNEY	N		N	N	N		N	N		
Inflammation, chronic	-	1	-	-	-	-	-	-	-	-
Nephropathy	-	-	-	-	-	1	-	-	1	1
URINARY BLADDER	N	N	N	N	N	N	N	N	N	N
LYMPH NODE, MESENTERIC	N	N	N	N		N	N	N	N	N
Hemorrhage	-	-	-	-	1	-	-	-	-	-
ILEUM	N	N	N	N	N	N	N	N	N	N
CECUM	N	N	N	N	N	N	N	N	N	N
RECTUM	N	N	N	N	N	N	N	N	N	N
SCIATIC NERVE	N	N	N	N	N	N	N	N	N	N
TESTES	N	N	N	N	N	N	N	N	N	N
STERNUM	N	N	N	N	N	N	N	N	N	N
BONE MARROW	N	N	N	N	N	N	N	N	N	N
NASAL TURBINATES	N	N		N	N	N	N	N	N	N
Ulceration, palate	-	-	3	-	-	-	-	-	-	-

See Reports Code Table for Symbol Definitions

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: MALE

ANIMAL ID:	001	002	003	004	005	006	007	008	009	010
LYMPH NODE, MANDIBULAR										
Accumulation, plasma cell	-	-	3	-	-	-	-	-	-	-

See Reports Code Table for Symbol Definitions

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF 1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,scheduled sacrifice

STUDY NUMBER: L085122
GROUP: LOW DOSE: 50 mg/kg
SEX: MALE

ANIMAL ID:	021	022	023	024	025	026	027	028	029	030
ADRENAL GLAND										
Necrosis, coagulation	-	-	-	-	3	-	-	-	-	-
LUNG		N		N	N	N	N	N	N	N
Inflammation, chronic, interstitium	-	-	2	-	-	-	-	-	-	-
Inflammation, chronic, perivascular	1	-	-	-	-	-	-	-	-	-
TESTES										
Atrophy	-	-	-	-	-	4	-	-	-	-
Infiltration, stromal fat	-	-	-	-	-	4	-	-	-	-

See Reports Code Table for Symbol Definitions

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: MID DOSE: 200 mg/kg
SEX: MALE

ANIMAL ID:	041	042	043	044	045	046	047	048	049	050
LUNG	N	N	N	N	N	N	N	N	N	N
CECUM										
Necrosis, focal	-	-	2	-	-	-	-	-	-	-
Hemorrhage, focal	-	-	2	-	-	-	-	-	-	-
LYMPH NODE, MANDIBULAR										
Hemorrhage	-	-	-	-	2	-	-	-	-	-

See Reports Code Table for Symbol Definitions

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: MALE

ANIMAL ID:	061	062	063	064	065	066	067	068	069	070
BRAIN	N	N	N	N	N	N	N	N	N	N
PITUITARY GLAND	N	N	N	N	N	N	N	N	N	N
THYMUS	N	N	N	N	N	N	N	N	N	
Hemorrhage	-	-	-	-	-	-	-	-	-	2
SALIVARY GLAND	N	N	N	N	N	N	N	N	N	N
PANCREAS	N	N		N	N	N	N	N		N
Inflammation, chronic	-	-	1	-	-	-	-	-	-	-
Inflammation, chronic-active	-	-	-	-	-	-	-	-	3	-
ADRENAL GLAND	N	N	N	N	N	N	N	N	N	N
TRACHEA	N	N	N	N	N	N	N	N	N	N
THYROID GLAND	N	N	N	N	N	N	N	N	N	N
PARATHYROID GLAND	N	N	U	N	U	N	N	N	N	N
ESOPHAGUS	N	N	N	N	N	N	N	N	N	N
HEART		N	N		N	N	N	N	N	N
Cardiomyopathy	1	-	-	1	-	-	-	-	-	-
AORTA	N	N	N	N	N	N	N	N	N	N
COLON	N	N	N	N	N	N	N	N	N	N
DUODENUM	N	N	N	N	N	N	N	N	N	N
STOMACH	N	N	N	N	N	N	N	N	N	N
LIVER	N			N		N	N	N	N	N

See Reports Code Table for Symbol Definitions

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental.Scheduled sacrifice

STUDY NUMBER: L08512
GROUP: HIGH DOSE: 600 mg/kg
SEX: MALE

ANIMAL ID:	061	062	063	064	065	066	067	068	069	070
LIVER	N			N		N	N	N	N	N
Inflammation, chronic	-	1	1	-	1	-	-	-	-	-
SPLEEN	N	N	N		N	N	N	N	N	N
Erythropoiesis	-	-	-	1	-	-	-	-	-	-
JEJUNUM	N	N	N	N	N	N	N	N	N	N
LUNG	N	N	N	N	N	N	N	N	N	N
KIDNEY	N		N	N	N		N	N	N	N
Nephropathy	-	1	-	-	-	-	-	-	-	-
Hemorrhage	-	-	-	-	-	2	-	-	-	-
URINARY BLADDER	N	N	N	N	N	N	N	N	N	N
LYMPH NODE, MESENTERIC	N	N		N	N	N	N	N	N	N
Hemorrhage	-	-	1	-	-	-	-	-	-	-
ILEUM	N	N	N	N	N	N	N	N	N	N
CECUM	N	N	N	N	N	N	N	N	N	N
RECTUM	N	N	N	N	N	N	N	N	N	N
SCIATIC NERVE	N	N	N	N	N	N	N	N	N	N
TESTES	N	N	N	N	N	N	N	N	N	N
STERNUM	N	N	N	N	N	N	N	N	N	N
BONE MARROW	N	N	N	N	N	N	N	N	N	N
NASAL TURBINATES	N	N		N	N	N	N	N	N	N
Inflammation, acute	-	-	1	-	-	-	-	-	-	-

See Reporting Code Table for Symbol Definitions

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02-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: FEMALE

ANIMAL ID:	011	012	013	014	015	016	017	018	019	020
BRAIN	N	N	N	N	N	N	N	N	N	N
PITUITARY GLAND	U	N	N	N	N	N	N	N	N	N
THYMUS	N		N	N	N	N	N	N	N	N
Hemorrhage	-	1	-	-	-	-	-	-	-	-
SALIVARY GLAND	N	N	N	N	N	N	N	N	N	N
PANCREAS	N	N	N	N	N		N			N
Atrophy	-	-	-	-	-	-	-	1	1	-
Inflammation, chronic	-	-	-	-	-	1	-	-	-	-
ADRENAL GLAND	N	N	N	N	N	N	N	N	N	N
TRACHEA	N	N	N	N	N	N	N	N	N	N
THYROID GLAND	N	N	N	N	N	N	N	N	N	N
PARATHYROID GLAND	N	U	N	N	N	N	N	N	N	N
ESOPHAGUS	N	N	N	N	N	N	N	N	N	N
HEART	N	N	N	N	N	N	N	N	N	N
AORTA	N	N	N	N	N	N	N	N	N	N
COLON	N	N	N	N	N	N	N	N	N	N
DUODENUM	N	N	N	N	N	N	N	N	N	N
STOMACH	N	N	N	N	N	N	N	N	N	N

See Reports Code Table for Symbol Definitions

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03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: FEMALE

ANIMAL ID:	011	012	013	014	015	016	017	018	019	020
LIVER				N	N		N		N	
Inflammation, chronic	1	1	1	-	-	-	-	1	-	1
Inflammation, chronic-active	-	-	-	-	-	1	-	-	-	-
Necrosis	-	-	-	-	-	1	-	-	-	-
SPLEEN	N	N	N		N	N	N	N	N	N
Erythropoiesis	-	-	-	1	-	-	-	-	-	-
JEJUNUM	N	N	N	N	N	N	N	N	N	N
LUNG	N			N	N	N	N	N	N	N
Inflammation, chronic, interstitium	-	1	1	-	-	-	-	-	-	-
KIDNEY		N	N					N		
Mineralization	2	-	-	1	1	1	1	-	1	1
URINARY BLADDER	N	N	N	N	N	N	N	N	N	N
LYMPH NODE, MESENTERIC	N	N	N	N	N	N	N	N	N	N
ILEUM	N	N	N	N	N	N	N	N	N	N
CECUM	N	N	N	N	N	N	N	N	N	N
RECTUM	N	N	N	N	N	N	N	N	N	N
SCIATIC NERVE	N	N	U	N	N	N	N	N	N	N
OVARY	N	N	N	N	N	N	N	N	N	N
UTERUS	U	N	N	N	N	N	N	N	N	N
STERNUM	N	N	N	N	N	N	N	N	N	N
BONE MARROW	N	N	N	N	N	N	N	N	N	N

See Reports Code Table for Symbol Definitions

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03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: FEMALE

ANIMAL ID:	011	012	013	014	015	016	017	018	019	020
NASAL TURBINATES	N	N	N	N	N	N	N		N	N
Inflammation, acute	-	-	-	-	-	-	-	1	-	-
Metaplasia, squamous	-	-	-	-	-	-	-	2	-	-
LYMPH NODE, MANDIBULAR										
Accumulation, plasma cell	-	-	2	-	-	-	-	-	-	-
Hemorrhage	-	-	3	-	-	-	-	-	-	-
Hyperplasia, lymphoid	-	-	2	-	-	-	-	-	-	-
BONE										
Fracture	-	-	-	4	-	-	-	-	-	-

See Reports Code Table for Symbol Definitions

03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: LOW DOSE: 50 mg/kg
SEX: FEMALE

ANIMAL ID:	031	032	033	034	035	036	037	038	039	040
THYMUS										
Hemorrhage	-	-	-	-	-	-	-	-	1	-
LUNG	N	N	N	N	N	N		N		
Inflammation, chronic, interstitium	-	-	-	-	-	-	1	-	2	1
EYE										
Atrophy, retina	-	4	-	-	-	-	-	-	-	-
Inflammation, chronic, retina	-	2	-	-	-	-	-	-	-	-
Cataract	-	2	-	-	-	-	-	-	-	-

See Reports Code Table for Symbol Definitions

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03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: MID DOSE: 200 mg/kg
SEX: FEMALE

ANIMAL ID:	051	052	053	054	055	056	057	058	059	060
LUNG	N	N	N	N	N	N	N	N	N	N
EYE										
Atrophy, retina	-	-	-	-	-	-	-	-	4	-
Cataract	-	-	-	-	-	-	-	-	3	-

See Reports Code Table for Symbol Definitions

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03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 400 mg/kg
SEX: FEMALE

ANIMAL ID:	799	072	073	074	075	076	077	078	079	080
BRAIN	N	N	N	N	N	N	N	N	N	N
PITUITARY GLAND	N	N	N	N	N	N	N	N	N	N
THYMUS	N	N	N	N	N	N	N	N	N	N
SALIVARY GLAND	N	N	N	N	N	N	N	N	N	N
PANCREAS	N	N	N	N	N	N	N	N	N	N
ADRENAL GLAND	N	N	N	N	N	N	N	N	N	N
TRACHEA	N	N	N	N	N	N	N	N	N	N
THYROID GLAND	N	N	N	N	N	N	N	N	N	N
PARATHYROID GLAND	N	U	N	N	N	U	N	N	N	U
ESOPHAGUS	N	N	N	N	N	N	N	N	N	N
HEART	N	N	N	N	N	N	N	N		N
Cardiomyopathy	-	-	-	-	-	-	-	-	1	-
AORTA	N	N	N	N	N	N	N	N	N	N
COLON	N	N	N	N	N	N	N	N	N	N
DUODENUM	N	N	N	N	N	N	N	N	N	N
STOMACH	N	N	N	N	N	N	N	N	N	N
LIVER		N	N	N	N				N	
Inflammation, chronic	1	-	-	-	-	1	1	1	-	2
SPLEEN	N	N	N	N	N	N	N	N	N	N

See Reports Code Table for Symbol Definitions

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03-MAR-1995

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

TABULATED ANIMAL DATA

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: FEMALE

ANIMAL ID:	799	072	073	074	075	076	077	078	079	080
JEJUNUM	N	N	N	N	N	N	N	N	N	N
LUNG	N	N	N	N		N	N	N		N
Inflammation, chronic, interstitium	-	-	-	-	-	-	-	-	1	-
KIDNEY	N							N		N
Mineralization	-	1	1	1	1	1	1	-	1	-
URINARY BLADDER	N	N	N	N	N	N	N	N	N	N
LYMPH NODE, MESENTERIC	N	N	N	N	N	N	N	N	N	N
ILEUM	N	N	N	N	N	N	N	N	N	N
CECUM	N	N	N	N	N	N	N	N	N	N
RECTUM	N	N	N	N	N	N	N	N	N	N
SCIATIC NERVE	N	N	N	N	N	N	N	N	N	N
OVARY	N	N	N	N	N	N	N	N	N	N
UTERUS	N	N	N	N	N	N	N	N	N	N
STERNUM	N	N	N	N	N	N	N	N	N	N
BONE MARROW	N	N	N	N	N	N	N	N	N	N
NASAL TURBINATES	N	N	N	N	N	N	N	N	N	N

See Reports Code Table for Symbol Definitions

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03-MAR-1995

SECTION V

CORRELATION OF GROSS AND MICROSCOPIC (MICRO) FINDINGS

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: MALE

Animal ID: 003
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
LYMPH NODE, MANDIBULAR - ENLARGED, 10X10X3 MM

Related Histopathology:
LYMPH NODE, MANDIBULAR - Accumulation, plasma cell

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: LOW DOSE: 50 mg/kg
SEX: MALE

Animal ID: 025
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
ADRENAL GLAND - UNILATERAL, SMALL, 3 MM DIAMETER

Related Histopathology:
ADRENAL GLAND - Necrosis, coagulation

Animal ID: 026
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
TESTES - RIGHT, SMALL, 10X6X4 MM, WHITE

Related Histopathology:
TESTES - Atrophy; TESTES - Infiltration, stromal fat

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: MID DOSE: 200 mg/kg
SEX: MALE

Animal ID: 041
Animal Fate: Accidental

Reference to Necropsy Record:
LUNG - ENLARGED

Related Histopathology:
LUNG - No corresponding lesion

Animal ID: 043
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
INTESTINE LARGE, CECUM - FOCUS, 20X15X2 MM, RED

Related Histopathology:
CECUM - Necrosis, focal; CECUM - Hemorrhage, focal

Animal ID: 045
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
LYMPH NODE, MANDIBULAR - ENLARGED, 6X7X3 MM, RED

Related Histopathology:
LYMPH NODE, MANDIBULAR - Hemorrhage

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: MALE

Animal ID: 063
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
LIVER - LESION, PALE

Related Histopathology:
LIVER - No corresponding lesion

Animal ID: 070
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
THYMUS - BILATERAL, LESION, MOTTLED

Related Histopathology:
THYMUS - Hemorrhage

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: Recovery sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: MALE

Animal ID: 098
Animal Fate: Recovery sacrifice

Reference to Necropsy Record:
LYMPH NODE, MANDIBULAR - ENLARGED, 10X8X3 MM, DARK RED

Related Histopathology:
LYMPH NODE, MANDIBULAR - Not required by protocol

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: CONTROL: 0 mg/kg
SEX: FEMALE

Animal ID: 013
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
LYMPH NODE, MANDIBULAR - LESION, RED

Related Histopathology:
LYMPH NODE, MANDIBULAR - Hemorrhage

Animal ID: 014
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
BONE - TIBIA, LESION, 15X15X7 MM

Related Histopathology:
BONE - Fracture

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: LOW DOSE: 50 mg/kg
SEX: FEMALE

Animal ID: 032
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
EYE - LEFT, LESION, OPAQUE

Related Histopathology:
EYE - Cataract

Animal ID: 039
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
THYMUS - FOCUS, RED

Related Histopathology:
THYMUS - Hemorrhage

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: ALL

STUDY NUMBER: L085122
GROUP: MID DOSE: 200 mg/kg
SEX: FEMALE

Animal ID: 059
Animal Fate: Scheduled sacrifice

Reference to Necropsy Record:
EYE - LEFT, LESION, OPAQUE

Related Histopathology:
EYE - Atrophy, retina; EYE - Cataract

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PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: Accidental,Scheduled sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: FEMALE

No Gross Observations for any animal in this group

PATHOLOGY ASSOCIATES, INC.
90-DAY ORAL GAVAGE TOXICITY STUDY OF
1,3,5-TRIMETHYLBENZENE IN RATS WITH A RECOVERY GROUP
IIT RESEARCH INSTITUTE PROJECT NUMBER L08512, STUDY NUMBER 2

CORRELATION OF GROSS & MICRO

STUDY ID : L08512 SN2
FATE: Recovery sacrifice

STUDY NUMBER: L085122
GROUP: HIGH DOSE: 600 mg/kg
SEX: FEMALE

No Gross Observations for any animal in this group

QUALITY ASSURANCE STATEMENT

This histopathology project was inspected and audited by the PAI Quality Assurance Unit (QAU) as required by the Good Laboratory Practice (GLP) standards promulgated by the U.S. Environmental Protection Agency. The pathology narrative report is an accurate reflection of the recorded data. The following table is a record of the inspections/audits performed and reported by the QAU:

	Date of Inspection	Phase Inspected	Date Findings Reported to Management and Study Pathologist
*	10/17/94	Tissue Trimming	10/17/94
**	12/07/94	Processing/Embedding	12/07/94
*	11/18/94	Microtomy	11/21/94
*	01/13/95	Staining	01/13/95
*	01/13/95	Coverslipping	01/13/95
*	10/26/94	Labeling	10/26/94
*	11/09/94	Quality Control/Checkout	11/09/94
**	03/17/95	Individual Animal Data	03/17/95
**	03/03/95	Data Entry	03/17/95
**	03/03/95	Computer Generated Tables	03/17/95
**	03/03/95	Draft Pathology Report	03/17/95
**	05/08/95	Final Pathology Report	05/08/95

* General quarterly phase inspection
** Inspection specific for this study

In accordance with the PAI Quality Assurance Division's Standard Operating Procedures, all critical phase inspections are conducted on a random basis quarterly or more frequently. Those general phase inspections listed are the most recent conducted during the period each task associated with this project was performed.

Andrea M. Smith
Quality Assurance Unit
PAI Illinois Division

05/08/95
Date

90-Day Oral Gavage Toxicity Study of 1,3,5-Trimethylbenzene in Rats with a Recovery Group
IITRI Project Number L08512, Study Number 2

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