Pathology and Toxicology
Riker Laboratories, Inc.

Building 270-3S-05, 3M Center
St. Paul, Minnesota 55144-1000

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TWO YEAR ORAL (DIET) TOXICITY / CARCINOGENICITY STUDY OF FLUOROCHEMICAL FM-3924 IN RATS

(RIKER Experiment No. 0281CR0012)

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TWO YEAR ORAL (DIET) TOXICITY/CARCINOGENICITY STUDY OF FLUOROCHEMICAL FM-3924 IN RATS

(RIKER Experiment No. 0281CR0012)

REPORT SUMMARY

The purpose of this study was to assess the potential chronic toxicity and oncogenicity of FM-3924, an industrial grade of N-ethyl perfluorooctanesulfonamido ethanol, by mixing in the diet and feeding to 50 rats per sex per dose group for two years. An interim termination and evaluation was performed at one year on 15 additional rats per sex from only the control and high-dose groups.

A total of 460 Sprague-Dawley rats (230 of each sex) were equally divided into four groups. The rats were fed diets containing either 0, 10, 30 or 100 ppm of FM-3924 for the duration of the study.

In-life observations performed during the course of the study included: daily observations for abnormal clinical signs; periodic physical examinations; periodic recording of body weight and feed consumption; ophthalmoscopic examinations; and clinical pathology determinations including hematology, clinical chemistry and urinalysis.

Macroscopic postmortem examinations were performed on all animals including those that died or were terminated prior to the end of scheduled dosing. Selected organ weights were obtained from all of the rats at scheduled necropsy at one year as well as from 15 rats/sex/group, randomly selected from the control and all FM-3924-treated groups, at the termination of the study. Selected tissue specimens were harvested from each animal at necropsy, and preserved for future histopathologic evaluation. Microscopic evaluation was performed on tissues preserved from all of the control and high-dose rats, while a similar evaluation was performed on a limited list of tissues obtained from the low- and mid-dose animals.

The major in-life findings associated with FM-3924 administration consisted of a dose related decreased rate of mean body weight gain, an increase in feed consumption per kilogram of mean body weight, a slight

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increase in the incidence of ataxia. A slight increase in the incidence of clonic convulsions was seen only in the high-dose male rats when compared to the control group. In the high-dose groups, male mortality values were slightly increased whereas female mortality was slightly decreased when compared to the corresponding control groups.

FM-3924 related hematologic changes were seen in the mid- and high-dose female rats only and consisted of a decrease in red blood cell counts, in hemoglobin concentration, and in hematocrit values: these changes were observed very early in the study, but did not progress into anemia by the end of the two year dosing period. There was an increased incidence of poikilocytosis, microcytosis, and polychromasia in the high- and mid-dose females at 24 months. The degree of morphological change was generally noted as slight.

Increased liver weights and microscopic findings including hepatomegalocytosis and hepatocellular degeneration with and without necrosis, were the primary dose-related toxicologic findings observed in this study. The hepatomegalocytosis was considered to be the result of chronic hepatocellular metabolic stimulation by FM-3924. The severity and incidence of the liver findings were similar at both the one year and two year necropsies.

The non-neoplastic findings observed in this study were believed to be related to hepatocellular effects and/or were associated with a mild exacerbation of anticipated geriatric endocrine changes in this strain of rat and not considered to be primary test article-related effects. Specific histopathology findings which had an equivocal relationship to treatment with FM-3924 include a dose-related decrease of chronic myocarditis and a statistically significant, dose-related increase in ovarian tubular hyperplasia in the female test article treated groups. Other findings were considered to be spontaneous in origin, and occurred either sporadically or at a generally similar incidence among all groups including controls.

The no observed adverse effect level (NOAEL) feed concentration was judged to be greater than 30 but less than 100 ppm of FM-3924 in the diet. Based on feed consumption data, these NOAEL concentrations corresponded to approximate average daily doses for both sexes of 1.5 and 5.0 milligrams per kilogram of body weight, respectively.

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The overall incidence of hepatocellular adenomas and carcinomas was low in both control and FM-3924-treated groups with only the high-dose female rats possibly having a tumor incidence outside historical control limits. The majority of neoplasms were observed in endocrine or endocrine-sensitive organs which are typical neoplastic sites for older rats of this strain. The incidence of these neoplasms was similar among control and test article-treated groups, and did not demonstrate a unique tumor type.

Based on tumor incidence, types of tumors, onset time of tumor appearance, malignancy patterns of tumors and the final mortality values at two years, FM-3924 was not considered to be carcinogenic in the rat under the design and conditions of this study.

TWO YEAR ORAL (DIET) TOXICITY/CARCINOGENICITY STUDY OF FLUOROCHEMICAL FM-3924 IN RATS

INTRODUCTION

This study was designed to evaluate the chronic toxicologic and carcinogenic potential of FM-3924, an industrial grade of N-ethyl perfluorooctanesulfonamido ethanol, in rats following oral administration in the diet for a period of two years. The study was sponsored by the Commercial Chemical Division of 3M Company and was performed by the Pathology and Toxicology Department of Riker Laboratories, Inc., 3M Company, St. Paul, Minnesota, U.S.A. The study and subsequent reporting was coordinated for the sponsor by the 3M Corporate Toxicology Services staff. The in-life or dosing portion of the study began on April 21, 1981, and was completed on May 18, 1983. A copy of the study protocol with amendments is contained in this report as Appendix Item H.

The study was designed to evaluate two separate fluorochemicals, FM-3924 and FC-143, using a common set of control animals. This report will describe the results of the FM-3924 treatment while the results relating to the FC-143 study will be reported separately.

The study was conducted in accordance with the Department's Standard Operating Procedures (ie., SOPs) and in compliance with the Food and Drug Administration's Good Laboratory Practice (GLP) regulations (21 CFR Part 58). Various phases of the study were inspected by the RIKER Quality Assurance Unit; their statement is presented in Appendix Item I of this report. The original signed protocol with amendments, list of study personnel, raw data, study specimens, and other pertinent study samples/documents will be maintained within the Pathology and Toxicology Department archives currently located at 3M Center in St. Paul, Minnesota.

MATERIALS AND METHODS

Test System: Four-hundred and sixty Sprague-Dawley rats [Crl:COBS^{R} CD(SD)BR, Charles River, Portage, MI], 39 to 41 days of age when treatment began, were divided by means of a table of random numbers into four groups. The control and high-dose groups each contained 65 males and 65 females, whereas the mid- and low-dose groups each contained 50 male and 50 female rats.

The rats were housed in hanging stainless steel cages with wire mesh floors and fronts. The males were housed individually, but the females were housed two per cage. The animals were housed in two separate rooms, one containing the control groups and one containing the FM-3924 treatment groups in order to prevent cross contamination by potential vaporization and/or sublimation of the test article. Air samples were taken from each of the animal treatment rooms four months after the initiation of the study in order to assay for the presence of airborne contaminants. The samples were analyzed by the Analytical Section of the 3M Central Research Laboratory and were found to be below detectable limits for the suspected fluorochemicals. In addition to the air monitoring, 30 untreated sentinel rats were placed in each of the two animal rooms. From each animal room, 5 male and 5 female sentinel rats were euthanized during the first week of the study, and at 1 and 3 months after the start of the study. Plasma samples obtained from these rats were analyzed for organic fluorine and were found to contain less than one part per million (see Appendix Item A).

Each animal room was temperature and humidity controlled with the lighting on a 12 hour light/dark cycle. Individual rats were uniquely identified by an animal number on a cage card and on a tag affixed to their ear. Feed (Certified Purina Laboratory Chow, Ralston-Purina Co., St. Louis, MO) and tap water were provided ad libitum.

Test Substance/Diet Preparation: FM-3924 (Lot No. 547) was analyzed by the Commercial Chemicals Divisions (CCD) Analytical Laboratory prior to the start of the study, after approximately one year from the start of the study, and at the termination of the dosing period. No detectable changes were found in the test substance during this time (see CCD Analytical Reports Nos. 318, 347 and 412 in Appendix Item J).

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The test substance was a straw-colored waxy solid which was solubilized in ethanol prior to mixing into the diet. The formula and procedures for preparing the test article/diet mixtures are contained in Appendix Item B. Prior to initiating compound administration to any animals, the test substance/diet mixture was assayed. FM-3924 was found to be uniformly blended and stable for one week in the ground feed (see CCD Analytical Report No. 202 in Appendix Item J).

Throughout the study, test article/diet mixtures were prepared fresh weekly and representative samples of each were collected and assayed for test article content and homogeneity during the first month of the study and at 3 month intervals thereafter (see Appendix Item B). The results of these assays indicated that the level of FM-3924 was generally within a few percent of that desired (Table 1).

The rats received either FM-3924-treated or control (i.e., untreated) diets in glass jars 10.2 cm high x 8.9 cm in diameter. A 5.1 cm access hole was cut in the stainless steel lid. On a weekly basis the diet jars were removed and replaced with clean jars containing fresh diet mixtures.

Experimental Design: The study consisted of one control group and three treatment groups. The dosage levels and animal distribution are listed hereinafter.

Treatment Groups	Dosage Levels (ppm)	Group Size & Animal Numbers Males (An. Nos.)	Females (An. Nos.)
1 - Control	0	65 (3516-3580)	65 (4576-4640)
2 - High	100	65 (3696-3760)	65 (4756-4820)
3 - Mid	30	50 (3761-3810)	50 (4821-4870)
4 - Low	10	50 (3811-3860)	50 (4871-4920)

An interim termination at one year involved 15 male and 15 female rats from both the control and high-dose groups. The remaining 50 animals per sex per group continued on study.

In-Life Observations: All animals were observed daily throughout the two-year dosing period. Weekly physical examinations included palpation for the presence of masses as well as observations for pharmacotoxic signs; mortality was recorded daily. During the study, moribund animals were closely monitored and euthanized when in the judgement of the Study Director death appeared to be imminent, in order to harvest non-autolysed tissue for subsequent histopathologic examination.

Body weights and feed consumption were recorded once per week for the first six months, and then once every two weeks for the remainder of the study.

Eye examinations using indirect ophthalmoscopy and/or slit lamp biomicroscopy were performed on the control and high-dose rats by the Staff Veterinarian prior to compound administration and at approximately one year. The eyes of the surviving control and high-dose animals were examined 2-3 weeks prior to the termination of the study by a consulting Veterinary Ophthalmologist (see Appendix Item G).

Clinical pathology determinations included hematology, clinical chemistry (plasma) and urinalysis. Tests were conducted on samples obtained from 15 rats per sex from each group at 3, 6, 12, 18 and 24 months; animals were randomly selected at each time interval. Hematologic tests included total red and white blood cell counts, hemoglobin, hematocrit, and a differential white blood cell count. Clinical chemistry parameters included total bilirubin, total protein, albumin, blood urea nitrogen (BUN), glucose, alkaline phosphatase (AP), creatine phosphokinase (CPK), aspartate aminotransferase (AST-formerly SGOT), alanine aminotransferase (ALT-formerly SGPT), and calcium. Urine tests included pH, specific gravity, albumin, glucose, bilirubin, occult blood and ketones.

Blood samples were collected from the retrobulbar venous plexus of anesthetized rats which had been fasted overnight. Blood was generally collected from the right eye. Urine samples were obtained by placing each rat in an individual metabolism cage for 20-22 hours. The specific methods

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used for hematology, clinical chemistry and urinalysis are outlined in Appendix C. The mean hematology and clinical chemistry values from the treated groups were compared to both the concurrent control group as well as normal ranges for these parameters obtained from historical control animal data generated in this laboratory (Appendix C).

Metabolic Examination: Overnight urine and fecal samples were collected at 2, 5, 11 and 23 months from five rats per sex per group for total organic fluoride analysis, and for the presence of FM-3924 and/or FC-95 (a FM-3924 metabolite). At the scheduled one and two year necropsies, samples of liver, blood, kidney, spleen, lung and bone marrow (ie. from the femur) were saved from five rats/sex/group. After collection, all specimens were frozen by the RIKER Drug Metabolism Department. The results of these analyses will be reported separately.

Postmortem Examinations: Gross postmortem examinations were performed on all rats which died or were terminated in extremis, on all rats terminated at the one year interim necropsy, and on all rats surviving to the end of the scheduled dosing period. At necropsy, an examination was made of the external body surface and body orifices. The carcass was then opened and the contents of the abdomen, thorax and cranium were examined in situ and following removal from the body.

Organ weights (ie. wet tissue) were obtained at the interim termination from both the control and high-dose groups, and from the control and all FM-3924-treated groups at the two year necropsy. The weights of the adrenal glands, brain, testes, heart, kidneys, liver, spleen and uterus were recorded for 15 randomly selected rats/sex/group. Body weights were obtained just prior to necropsy from the same rats in order to calculate organ weights relative to whole body weights.

Representative samples of the following tissues and organs from each rat were fixed in 10% neutral, buffered formalin for subsequent histologic processing:

Aorta
Adrenals (2)
Brain (3 Sections including frontal cortex and basal ganglia, parietal cortex and thalamus; cerebellum and pons)
Eyes
Gonads
Ovaries (2)
Testes/Epididymides (2)
Heart
Small Intestine (3 Sections)
Large Intestine
Kidneys (2 Sections)
Liver (2 Sections)
Lung (2 Sections)
Lymph node (mesenteric)
Mammary Gland (females)
Pancreas
Pituitary
Salivary Gland
Spinal Cord/Bone Marrow (vertebrae)
Spleen
Stomach
Thyroid/Parathyroid/Trachea/Esophagus
Urinary Bladder
Uterus or Prostate
Any tissue masses (suspected tumors)
Any gross lesion

Light microscopic examination was performed on hematoxylin and eosin stained, paraffin-embedded tissue sections from all tissues listed above, when available, and from all rats in the control (Group 1) and high-dose (Group 2) populations regardless of the cause of death. Microscopic examination of tissues from the middle- (Group 3) and low- (Group 4) dose rats included the tissues listed above except: aorta, brain, eyes, small and large intestines, lymph node(s), and spinal cord/bone marrow. The histopathologic examination and evaluation of these tissues was performed by Dr. Robert G. Geil, consulting Veterinary Pathologist (see Appendix Item D).

Biostatistical Methods: The means and standard deviations for body weights, feed consumption, absolute organ weight, relative organ weight-to-whole body weight, organ weight-to-brain weight ratios and other laboratory data were determined separately for each sex and dose group.

These data were analyzed using Bartlett's test for homogeneity of variance. If this test was not significant at $p = 0.001$, the data were further analyzed by comparing each treated group to the control group using a two-tailed Dunnett's test at the $p = 0.05$ significance level. The

results of Dunnett's test have been indicated by asterisks on the mean tables. If Bartlett's test was significant at p = 0.001, the data were ranked and a two-tailed Dunnett's test was performed on the ranks. These results have been indicated by the pound sign (#) on the mean tables.

In addition, for each organ/lesion classification the sexes were analyzed separately using a two-tailed Fisher's Exact Test comparing each treated group to the controls. An p = 0.05 significance level with Bonferroni's adjustment for multiple comparisons was used within each organ/lesion/sex category. If the expected value of each cell was greater than 20, then Yates' corrected Chi-Square test was used. An asterisk on the summary tables indicates a significant difference between the controls and the treated group.

Internal RIKER memoranda pertaining to these biostatistical procedures are presented within Appendix Item E.

RESULTS

In-Life Findings: Body weight gains were depressed in the FM-3924-treated male rats compared to the control male animals for only the first month and a half of the study. There was an approximate 14% decrease in the high-dose body weights by study week six and this difference was maintained until the end of the study. Further, a 2-6% decrease occurred in the low- and mid-dose male groups throughout the study (see Table 2, Figure 1 and Appendix Item F).

Body weight gains were also depressed in the FM-3924 dosed female rats compared to the control female animals. However, there were several differences between the sexes regarding this parameter. The onset for this change was slower, the effects were clearly dose dependent, the degree of difference from control values was greater, and the changes in body weight gain continued throughout the study for the female groups. The body weight differences compared to control values at the end of the study were -20.8%, -15.3% and -3.5% for the high-, mid- and low-dose groups, respectively (see Table 3, Figure 2 and Appendix Item F).

Feed consumption, measured as daily mean consumption per kilogram of mean body weight, was generally increased in all of the FM-3924-treated male and female groups over control animals. While more pronounced in the treated males, feed consumption increased gradually during the two year test period when compared to control group feed intake. In the males, this change was most pronounced in the high-dose group where there was roughly a 15% increase noted with sporadic values going as high as 33% during the two year test period. In the females, the pattern was less consistent during the first 94 weeks. There was an increase in feed consumption during the last 10 weeks of the study, particularly in the mid-dose group, but also in the high-dose females. During this specific period, feed consumption increased as much as 35% in the mid-dose animals (see Tables 4 & 5 and Figures 3 & 4).

Actual feed consumption (without regard for body weight change) was decreased in the high-dose males, but increased in the mid- and low-dose male groups during the first year of the study. During the second year, all male dose groups tended to consume more feed than the comparable

control animals. In the female treated groups, only the low-dose group showed a very slight increase in feed consumption. During the second year, all of the female dose groups tended to consume less feed than the comparable controls with the exception of the mid-dose group which consumed considerably more feed than the controls during the last ten weeks of the study (see Tables 6 & 7 and Appendix Item F).

Test substance concentration measured as parts per million in the diet was determined at three month intervals with duplicate analyses performed on two separate occasions when aberrant values were detected. The mean deviations from the target concentration of the high-, mid- and low-dose groups were +3.4%, -1.8% and +1.4%, respectively (Table 1).

Actual test substance consumption was determined for every two week period for each sex and each experimental group, and expressed as milligrams per kilogram per day (mg/kg/day). The mean test substance consumption was approximately 4.5, 1.3, and 0.4 mg/kg/day for males, and 5.5, 1.6 and 0.5 mg/kg/day for females regarding the high-, mid- and low-dose groups, respectively. Mean test substance consumption values calculated at two week intervals for the entire study are presented in Table 8.

Overall survival rates, particularly for the male rats, were not affected during the two year test period. At the end of the first year, 15 rats/sex from the control and high-dose groups were terminated to fulfill protocol requirements. Therefore, the final survival rates based on 50 rats/sex/group were 70%, 64%, 70% and 78% for males, and 50%, 68%, 51% and 44% for females regarding the control, high-, mid- and low-dose groups, respectively. A possible test substance effect may have slightly lowered the survival rate in the high-dose male group; however, the survival rate in the high-dose females was higher when compared to control rats (see Table 9).

A summary of the most commonly observed clinical signs is contained in Table 10. The only clinical sign that occurred more frequently in FM-3924-treated groups than control groups was in clonic convulsions, which occurred at a slightly higher incidence in high-dose males. In this case, ten animals were affected whereas clonic convulsions were seen only in three, three and four male rats in the control, mid- and low-dose groups, respectively. There was a very slight increase in the incidence of ataxia

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in both sexes of the treated groups; however, there also was a background incidence of this clinical finding in the controls.

The FM-3924 treated population of rats experienced a suspected outbreak of sialodacryoadenitis (SDA) viral infection between the first and second months of the study. Clinical signs included swollen submandibular salivary glands combined with occasional ocular manifestations observed in eight male and three female high-dose animals, four male and three female mid-dose animals, and five male and 13 female low-dose rats. The submandibular swelling resolved within 10 days, and the incidence of residual ocular changes was extremely low. The control population had comparable signs during the sixteenth month of the study. Thirteen males and 13 females demonstrated signs of this condition which persisted for about 16 days from the time of onset. One male and three females developed ocular opacities during this period.

The incidence of palpable tissue masses during the in-life phase of the study was not increased in any of the FM-3924-treated groups when compared to the control rats (Table 10).

The results of the final ophthalmoscopic examinations were negative relative to any FM-3924 treatment-related effects. Changes which were observed included a random distribution of cataracts considered to be typical geriatric changes along with some cases of chronic uveitis and superficial keratitis which were also considered to be within normal limits for aging populations of rats (see Table 11 and Appendix Item G). Many of the rats which exhibited ocular lesions were those used to obtain blood samples via the retrobulbar venous plexus.

The high-dose female red blood cell counts were decreased below control values throughout the two year study with statistically significant decreases observed at 6, 12 and 18 months (Table 13). In contrast, the female mid-dose erythrocyte counts were statistically increased at 3 and 6 months, but were not significantly different from control values during the last year of the study. There was an increased incidence of poikilocytosis, microcytosis and polychromasia in the high- and mid-dose females at 24 months. The degree of morphological change was generally noted as slight. Hemoglobin values were statistically decreased in the high-dose females from month 3 to month 24. Hematocrit values were statistically decreased in the high-dose females at the 3 month interval.

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Changes seen in leukocytic parameters did not suggest a meaningful test substance effect at any FM-3924 dose levels (Tables 12 & 13). Increased white blood cell counts were seen in the male FM-3924 treated groups during the first three months of the study, but the increase was only statistically significant at the high-dose and still within an acceptable range for all groups. The increase in leukocytes was generally due to small increases in neutrophils and/or leukocytes. At six months, leukocyte counts were again slightly elevated in all male FM-3924 treated groups with elevated neutrophil counts in the mid-dose, decreased neutrophils in the low-dose, and significantly elevated lymphocyte counts in both the mid- and low-dose groups. The only change seen in the FM-3924 treated females was a nonspecific decrease in leukocytes as a result of a decrease in lymphocytes during the first three months .

Clinical chemistry findings at three months included slight increases in serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (AP) and blood urea nitrogen (BUN) in all of the FM-3924-treated male groups. The treated female groups at this same time showed only a minor rise in BUN when compared to concurrent control values. From six months until the end of the study, the high-dose (and occasionally mid-dose) male ALT and AST values were increased above both the concurrent controls and the historical control values for the laboratory. AP values were also increased during this same time period, but rarely did these values exceed historical control limits. After six months, no meaningful changes were noted in the female groups (Tables 14 & 15).

Urinalysis findings demonstrated a general, time related increase in incidence and severity of albumin and occult blood in all of the male and female control and treated groups. These findings were more pronounced in the males than in the females at the end of the study. Other than an occasional incident of slight ketonuria in both control and treated animals, there were no other remarkable urinalysis findings (Table 16).

Postmortem Findings: The consulting Veterinary Pathologist's complete report is presented in Appendix Item D. The important gross pathology findings seen at the one year interim termination were limited to the high-dose male rats in which there was an increase in the incidence of pale and/or tan livers. This change was considered to be most likely a

compound related effect. There were no specific necropsy findings in the high-dose female animals suggestive of any alterations related to the administration of FM-3924.

FM-3924 related gross findings seen in male and female high-dose rats which were either found dead, terminated in extremis, or terminated at the end of the study were also limited primarily to the liver. These findings included an increased incidence of hepatic masses, nodules and raised lesions, mottled livers, and yellow or pale focal lesions. There were no gross findings suggestive of a test substance related effect seen in the low- and mid-dose animals necropsied at comparable periods of time. Those gross pathologic findings which were observed were not related to test article administration, and were typical of findings seen in aging rats of this strain. These findings included mammary masses, pituitary masses and foci, ulcers on the hind footpads, pale livers, and pale, pitted and enlarged kidneys.

Organ weights presented as either absolute or relative values (ie. ratio of organ/body weight or organ/brain weight) are contained in Tables 17 and 18. At the one year interim sacrifice where the only groups examined were the high-dose and controls (n = 15/sex/group), the most obvious changes in absolute weights were a statistically significant decrease in body weight and an increase in liver weight for both male and female high-dose animals compared with their respective control values. Statistically significant decreases ($p = <0.05$) in heart and spleen weights were also noted for both the males and females of the high-dose group, and statistically significant decreases were seen in adrenal and pituitary weights in the high-dose males only. Relative weight comparisons confirmed the increased liver weight in both sexes of the high dose group and in addition showed a significant increase in kidney and brain weights. Other statistically significant altered relative values in the high-dose group included increased uterine and adrenal weights in the females, and increased testicular and decreased pituitary weights in the males.

Organ weights were obtained from all four groups at the end of the study (n = 15/sex/group). Statistically significant decreased body weights and increased liver weights when compared to control values were seen only in the high-dose male and female animals. The only other significant change was a decrease in spleen weights in the high- and mid-dose male

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rats. Statistically significant relative organ weight changes found in both males and females included increased liver weights in the high- and mid-dose groups, and increased kidney weights in the high-dose group; statistically significant increased spleen weights were noted only in high-dose males. Liver to brain weight ratios were increased in all of the FM-3924 treated groups, but only in the high-dose groups was the change statistically significant ($p = <0.05$). Uterine and testicle to brain weight ratios were slightly increased in the FM-3924 treated groups.

Details of the histopathologic findings are contained in Appendix Item D and a summary of the major neoplastic and non-neoplastic microscopic changes found after two years of continuous oral administration of FM-3924 are enumerated in Tables 19 and 20.

Histopathologic evaluation of the tissues obtained from the animals necropsied at one year indicated the major FM-3924 effects were confined to the liver. Diffuse megalocytosis (ie. hypertrophy) and vacuolation of hepatocytes were the most common findings in essentially all of the male and female rats in the high-dose group. In addition, hepatocytic necrosis was found in 6/15 high-dose males, but was not seen in any of the high-dose females.

The majority of neoplasms observed after two years of dosing with FM-3924 involved either the liver or one of several endocrine or endocrine-sensitive organs (see Table 19). Hepatocellular carcinomas were found in 6%, 4%, 2% and 2% of the male rats from the control, high-, mid- and low-dose groups, respectively. For the females, hepatocellular carcinomas and adenomas were found only in the high-dose group with incidence values of 6% and 8%, respectively. The organ with the largest incidence of tumors was the pituitary gland in which adenomas in the control animals were 35% for males and 72% for females. Sporadic increases in incidence for this neoplasm were noted primarily for the FM-3924 treated males; however, there did not appear to be any meaningful relationship of these to the dose administered.

Mammary gland adenocarcinomas were present in both control and treated female rats at a level of 15%, 21%, 24% and 13% for the control, high-, mid- and low-dose groups, respectively. Similarly, fibroadenomas were seen in 22%, 13%, 33% and 36% of the female rats at the end of the study. Mammary gland adenomas (7%) and carcinomas (2%) were observed only in the

female controls. The incidence of uterine polyps, benign growths of the endometrium, was slightly increased in the mid- and low-dose females. Likewise, there were minor variations in the tumor incidence in the adrenal glands (ie. pheochromocytomas) and thyroids, both of which commonly exhibit spontaneous tumors in geriatric rats of this strain. Only the incidence of C-cell carcinomas of the thyroid in female rats appeared to show a minimal dose dependent increase with an incidence of 0%, 4%, 3% and 2% for the control, high-, mid- and low-dose groups, respectively. However, in contrast, the male control animals showed a greater incidence of C-cell carcinomas than any of the FM-3924 treated male groups (ie. 5%, 2%, 2% and 0%, respectively).

Non-neoplastic histopathologic changes at the end of the study were found in the adrenal, heart, kidney, liver, lung, testes, ovary, thyroid, urinary bladder and uterus (see Table 20). As noted in the one year interim histopathologic evaluation, the liver was the primary target organ for FM-3924 related effects, and there was a remarkable consistency in the type of findings observed after the second full year of test article administration at the high-dose level. Megalocytosis and hepatocyte vacuolation (both findings considered to be reversible biological events) were the major changes seen in both males and females treated with the highest doses of FM-3924. Megalocytosis was also found at an incidence exceeding 50% in the mid- and low-dose males, but was essentially absent from the corresponding female groups. Hepatocyte vacuolation was observed at an incidence less than control values in the mid- and low-dose male and female groups.

Hepatic cystoid degeneration, a condition characterized by areas of multilocular microcysts in the liver parenchyma, was seen at an incidence of 8%, 30%, 16% and 12% in males from the control, high-, mid- and low-dose groups, respectively, while only the high-dose females were affected at an incidence of 8%. Hepatocellular necrosis was found at an incidence of between 6-10% in the control animals of both sexes, but the high-dose males demonstrated an incidence rate for this lesion of 20%, with 0% and 4% in the mid- and low-dose groups, respectively. The incidence of liver necrosis for females was 8%, 12% and 10% for the high to low treatment groups. Hyperplastic nodules, a localized proliferation of hepatic parenchymal cells, was observed essentially only in the high-dose group

with an incidence of 10% in the males and 18% in the females as compared to 0% and 2% in the control male and female rats, respectively. The only other hyperplastic nodule seen was found in a mid-dose male animal.

There was a statistically significant and dose dependent increase in tubular hyperplasia of the ovarian stroma of female rats. Tubular hyperplasia is a diffuse, non-neoplastic increase in stromal tubular elements which is usually bilateral and associated with decreased or absent follicular development. The incidence of this change was 0%, 31%, 23% and 13% in the control, high-, mid- and low-dose groups, respectively. Cystic glands of the uterine endometrium were found at a higher incidence in the high-dose females (29%) when compared to the control animals (14%).

The incidence of nodular hyperplasia of the adrenal cortex was significantly increased in the high-dose males.

A statistically significant increased incidence of foamy macrophage accumulation in the lung of the high-dose male and female rats was considered a possible test article effect.

The remaining major non-neoplastic lesions (Table 20) and other histopathologic findings (Appendix Item D) had varying incidences either similar to, increased, or decreased from control values; however, essentially all of these findings are commonly associated with either endemic diseases and/or geriatric changes found in this strain of rat. The changes presented hereinafter were not considered test-article related findings, although their incidence varied from that observed in the control rats.

In the lung, the incidences of alveolar macrophages and vascular mineralization were increased above control levels while the incidence of interstitial pneumonia was essentially equal to or less than the control incidence at the end of the study. Likewise, the characteristic lesions of an endemic renal disease seen in old rats appeared to be somewhat diminished in the high-dose males and females. The incidences of adrenal gland changes, usually found in old rats, were inconsistent, being either higher or lower than the control values. The incidence of nodular hyperplasia of the adrenal cortex was significantly increased in the high-dose males; the incidence of sinusoidal ectasia was increased in the mid- and high-dose males but decreased in the females of the same group;

and the incidence of adrenal cortical vacuolation was decreased in the treated males but generally increased in the FM-3924 treated females.

The incidence of chronic myocarditis was reduced in a dose dependent fashion in the female rats while being increased above the control incidence in the mid- and low-dose males. Polyarteritis, a spontaneous lesion in the testes of old male rats, was found in this study in more control animals than in any of the FM-3924-treated groups. However, the incidence of testicular vascular mineralization was increased in the high- and low-dose animals.

The incidence of epithelial hyperplasia of the urinary bladder was decreased in all of the FM-3924-treated female groups, while there was an equivocal increase in the incidence for the mid-dose male group only.

Finally, the incidence of thyroid C-cell hyperplasia was moderately increased in both the male and female high- and mid-dose groups.

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DISCUSSION

The purpose of this study was to define any long term toxicity and to profile the potential oncogenicity of FM-3924, a perfluoroalkylsulfonamido alcohol used in a variety of industrial manufacturing processes. The results of the study included a series of biological events which when taken as separate findings may appear to confound test substance dose, sex and/or time relationships. However, considering an overview of all of these results, there appears to be a common pattern of test substance related effects which may be generalized as follows.

The general well being of a rat exposed to the experimental conditions of a two year feeding study may be examined at the beginning of the test by evaluating body weight gains and feed consumption compared to the study control animal population. Body weights of the males decreased as early as the second week of the study. The females also showed a decrease, but the time of onset was delayed and the early body weight differences were not as pronounced as those seen in the males. This effect did not appear to be associated with decreased palatability of the diet due to the addition of test article since feed consumption based on weight of diet consumed versus body weight was actually increased. The possible effects that the apparent SDA viral infection might have had on body weight gains were considered, but discounted since the FM-3924 treated animals continued to show weekly increases in body weight despite the fact that the total gains were less than control gains. Since there was a dose and sex dependent change in this parameter, the decrease in body weight gain could be associated with a direct test article effect, possibly through varying degrees of altered hepatocellular metabolic activity as suggested by the microscopic hepatocellular changes observed in tissues obtained at both the one and two year necropsies. Regardless of this assumption, mortality rates were not obviously affected by the decreased body weight gains.

The concentration of the test substance in the diet was maintained during the full two years of the study at 10, 30 and 100 ppm for the low-, mid- and high-dose groups, respectively. The average daily dosage of FM-3924 for the same time period and for both sexes combined was estimated to be about 0.5, 1.5 and 5.0 mg/kg/day, respectively. Both in-life and postmortem results confirmed the systemic absorption of the test substance

and the 100 ppm dosage level appeared to adequately comply with the concept of a maximum tolerated dose for a long term study in this particular strain of rat.

The only clinical signs seen during the study which were suggestive of a possible test article effect were ataxia and sporadic convulsions. The incidence of convulsions was increased very slightly only in the high-dose males, while ataxia was seen more frequently in both males and females of the FM-3924 treated groups as compared to control animals. These clinical signs were also seen in the control population but at a lower incidence. There were no cellular lesions found in the central or peripheral nervous system at the end of the study which could support a treatment related effect.

In the high-dose females there was an apparent decrease in hemoglobin; however, these values were within the normal ranges for this laboratory. There were no other meaningful compound-related effects on the hematologic parameters.

Elevation of serum alkaline phosphatase, aspartate aminotransferase and alanine aminotransferase activities, primarily in the FM-3924 treated male rats, suggested the presence of hepatocellular alterations. Most of the increases in enzyme activity were more pronounced in the earlier phases of the study, subsequently resolved in the mid- and low-dose males, and persisted in the high-dose group until the end of the study. The mean values in the mid- and low-dose groups from which these observations were derived were influenced commonly by only one or two animals with aberrant serum enzyme activities. However, there was no meaningful exacerbation of the liver changes even into the geriatric period of the rat's life span. These findings were substantiated by the organ weight and histopathologic comparisons obtained at the one and two year necropsies.

Mean blood urea nitrogen values were elevated in the male FM-3924 treated groups at three months, but not thereafter. If there were alterations in kidney function at that time, they did not persist until the end of the study since there was a decrease in the incidence of chronic nephropathy in the FM-3924 treated males at two years when compared with control males.

Changes in the quality or character of the urine specimens from both control and FM-3924 treated rats demonstrated a change in several urinary

parameters that were progressive over time. These findings were considered to be associated with the progressive degenerative changes of naturally occurring chronic renal disease commonly found in rats of this strain.

The primary test article effect occurred in the liver as increased organ weight (both absolute and relative), as gross findings at necropsy, and as histopathologic alterations. These changes were observed at the one year necropsy, but showed remarkably little progression one year later at the two year necropsy. The high-dose males and females had essentially equal incidences of hepatic findings, while the mid- and low-dose males were more markedly affected than were the females from the corresponding dose groups.

Hepatomegalocytosis and hepatocellular vacuolation are characteristic of increased metabolic activity in the rat. It is recognized that these lesions may progress to cystoid degeneration and, ultimately, hepatocellular necrosis. The incidence of hepatic necrosis in this study was slightly increased only in the high-dose males. Since the liver in the rat rarely repairs parenchymal cell loss with fibrosis or scar tissue, a more typical cellular reaction is hepatocellular hyperplasia. In this study, the incidence of hyperplastic nodules were increased only in the high-dose male and female animals (ie., 10% and 18%, respectively) compared to the control groups (ie. 0% and 2%, respectively). It is important to note that no proliferative hepatic lesions (ie. hyperplasia nor neoplasia) were seen in any of the high-dose rats after receiving FM-3924 for one year.

Primary liver neoplasms observed in this study after two years consisted of hepatocellular adenomas and carcinomas. The overall incidence of these neoplasms was low, with carcinomas occurring in both the control and FM-3924 treated groups as follows: males 6%, 4%, 2% and 2%; and females 0%, 6% 0% and 0% for the control, high-, mid- and low-dose groups, respectively. Benign hepatic neoplasms (ie. adenomas) were not found in any group except the high-dose females where an incidence of 8% was recorded. Considering the chronic liver stimulation noted in both the high-dose male and female groups during their life span, the incidence of hepatic neoplasia appears to be within reasonable limits with the possible exception of the high-dose female group. Combined malignant and benign incidence values are within reasonable historical control limits for the

high-dose males while the high-dose females appear to be slightly outside these limits only because there were no liver tumors seen in the control group. Based on these findings, FM-3924 was not considered to be a hepatic carcinogen in the rat.

Most of the neoplasms observed in this study originated from endocrine or endocrine-sensitive organs including the adrenal glands, mammary gland, pituitary, thyroid and uterus. These are common sites for spontaneous or naturally occurring oncogenesis in this strain of rat as evidenced by the specific tumor incidence in the control group (see Table 19). Deviations from the control incidence for these neoplasms were neither numerically meaningful nor did they involve a unique tumor type not commonly seen in this strain of rat.

The non-neoplastic findings reported from the histopathologic evaluation of all of the animals scheduled for the two year necropsy were mostly geriatric lesions typical for this strain of rat. The organs in which these lesions were found included adrenal glands, heart, kidneys, lung, testes, ovaries, thyroid, urinary bladder and uterus. Specific deviations from the control incidence seen in FM-3924 treated groups were addressed in the results section of this report. However, the following changes were considered equivocal test article related effects. The incidence of nodular hyperplasia of the adrenal cortex was significantly increased (22%) in the high-dose males compared to the same finding in the controls (4%), while the high-dose female rats showed a much lower incidence (2%).

Lung changes were also sporadic in occurrence with the incidences of the accumulation of alveolar macrophages increased in the high-dose males and females. The incidence of ovarian (stromal) tubular hyperplasia was increased in a statistically significant and dose dependent manner. The interpretation of this finding is uncertain, but a possible explanation is that it was secondary to the hepatic changes which may evoke endocrine related effects in older rats. Likewise, the increase in uterine cystic glands in the high-dose females could be a manifestation of this biological phenomenon.

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CONCLUSIONS

The pertinent findings after administering FM-3924 to rats in the diet at concentrations of 0, 10, 30 and 100 ppm for up to two years under the conditions of this study may be summarized as follows:

1. FM-3924 related hematologic changes were seen in the high-dose female rats only and consisted of a decrease in hemoglobin concentration, and in hematocrit values with some evidence of altered red blood cell morphology in blood smears obtained at the end of the study. While the decrease in hemogram values was observed very early in the study, it did not progress into anemia by the end of the two year dosing period.

2. Increased liver weights and microscopic findings including hepatomegalocytosis, which was considered to be the result of chronic hepatocellular metabolic stimulation by FM-3924, and hepatocellular degeneration with and without necrosis, were the primary dose-related toxicologic findings observed in this study. These liver changes were seen at the one year necropsy, but showed very little evidence of progression during the study.

3. The non-neoplastic findings observed in this study were not considered to be primary test article related effects, but were believed to be related to hepatocellular effects and/or were associated with a mild exacerbation of anticipated geriatric endocrine lesions in this strain of rat. Specific histopathology findings which had an equivocal relationship to treatment with FM-3924 included a statistically significant, dose-related increase in ovarian tubular hyperplasia observed with the female rat groups. Other findings were considered to be spontaneous in origin, and occurred either sporadically or at a generally similar incidence among all groups including controls.

4. The no observed adverse effect level (NOAEL) feed concentration was judged to be greater than 30 but less than 100 ppm of FM-3924 in the diet. Based on feed consumption data, these NOAEL concentrations corresponded to approximate average daily doses for both sexes of 1.5 and 5.0 milligrams per kilogram of body weight, respectively.

5. The overall incidence of hepatocellular adenomas and carcinomas was low in both control and FM-3924 exposed groups with only the high-dose female rats possibly having a tumor incidence outside historical control limits. The majority of neoplasms observed originated from endocrine or endocrine-sensitive organs which are typical neoplastic sites for older rats of this strain. The incidence of these neoplasms was similar among control and treated groups, and did not demonstrate a unique tumor type.

6. Based on the incidence and types of neoplasms, time of onset of tumor appearance, malignancy patterns of tumors found at two years and the final mortality values, FM-3924 was not considered to be carcinogenic in the rat.

PRINCIPAL PERSONNEL INVOLVED WITH THE CONDUCT AND REPORTING OF RIKER EXPERIMENT NO. 0281CR0012 - TWO YEAR ORAL (DIET) TOXICITY/CARCINOGENICITY STUDY OF FLUOROCHEMICAL FC-143 IN RATS

NAME	POSITION/FUNCTION
S.I. Bistner, D.V.M.	External Consultant/ Veterinary Ophthalmologist
M.T. Case, D.V.M., Ph.D.	Manager, Safety Evaluation
R.G. Geil, D.V.M.	External Consultant/ Veterinary Pathologist
R.W. Hawkinson, Ph.D.	Supervisor, Statistical Services
J.D. Henderson, D.V.M., M.S.	Manager, Laboratory Animal Medicine and Pathology
M.K. Hopp, A.A.S.	Senior Laboratory Technician/ Study Assistant
C.D. King, D.V.M., Ph.D.	External Consultant/Draft Report Preparation
C.E. Ludemann, B.S., M.T.	Senior Medical Technologist/ Clinical Pathology Determinations
L.A. Marschke	Advanced Secretary/ Report Typing
S.E. McCarville, B.S., M.S.	Advanced Biostatistician
W.C. McCormick, III, B.S.	Toxicology Specialist/Sponsor Representative and Project Coordinator
J.R. Nelson, H.T.	Histotechnologist/Microscope Slide Preparation
G.C. Pecore	Supervisor, Laboratory Animal Care
S.L. Westmark, A.A.S.	Laboratory Technician
L.O. Wiseth	Senior Laboratory Technician/ Assisted With Study Data

SIGNATURE PAGE

TWO YEAR ORAL (DIET) TOXICITY/CARCINOGENICITY STUDY OF FLUOROCHEMICAL FM-3924 IN RATS

RIKER Experiment No. 0281CR0012

From the Pathology and Toxicology Department
RIKER Laboratories, Inc./3M Company
St. Paul, Minnesota U.S.A.

Study Director: Leonard J. Sabinski 4/6/88
Leonard J. Sabinski, B.A. Date
Senior Toxicologist

Report Reviewed By: J L Allen 4-5-88
James L. Allen, Ph.D. Date
Diplomate, A.B.T.
Research Toxicologist

Report Approved By: Edward A. Erickson 4-5-88
Edward A. Erickson, Ph.D. Date
Laboratory Manager

Report Reviewed By: Steve V. Elrod 4-5-88
Steve V. Elrod, Ph.D. Date
Diplomate, A.B.T.
Manager, Pathology/Toxicology and
Laboratory Animal Medicine

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Table 1

Two Year Oral (Diet) Toxicity - Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Analytical Analysis of FM-3924[a]
(% Above/Below Desired Concentration)

Approximate Study Month	CCD Analytical Report Numbers	Dosage Levels (ppm) 200 Diet Concentrate	100	30	10
0 (Initial)	213	+ 7.0%	+ 7.0%	- 4.3%	± 0.0%
1	229	+ 4.0%	+ 4.0%	± 0.0%	+ 9.0%
4	251	+ 7.0%	+10.0%	+ 2.2%	+ 7.0%
7	290	+ 8.5%	+ 5.0%	- 1.0%	- 3.0%
10	320	- 1.0%	+ 5.3%	- 6.7%	[b] -21.7%
11	327	-	-	-	+ 0.7%
13	341	- 0.5%	- 1.3%	- 3.3%	+11.0%
16	367	- 3.5%	[c] -19.3%	- 4.4%	+ 6.7%
16	368	-	+ 3.3%	-	-
19	383	+11.5%	+ 7.3%	+11.0%	+13.0%
22	394	-16.5%	- 8.0%	-10.0%	-17.0%
24	403	+ 4.0%	+ 1.0%	- 2.0%	-13.0%
Mean Deviation for the study		+ 2.0%	[d] + 3.4%	- 1.8%	[d] + 1.4%

[a] Commercial Chemicals Division (CCD)
[b] Incorrect values given at this level due to instrument malfunction; this dosage level was reanalyzed after new detector was installed.
[c] Incorrect values given possibly due to a variation in analytical procedure; percentage near lower acceptable limit, this dosage level reanalyzed (two weeks later).
[d] Excluding from mean deviation the percentages near ± 20% acceptable limit.

Table 2

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Body Weights (g) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
0	165.3	168.2	+ 1.8	169.1	+2.3	165.6	0
2	270.9	253.6	- 6.4	262.8	-3.0	258.3	-4.6
4	334.0	308.7	- 7.6	327.7	-1.9	321.3	-3.8
6	390.7	333.1	-14.7	361.6	-7.4	355.3	-9.1
8	429.2	369.8	-13.8	404.8	-5.7	394.5	-8.1
10	456.2	397.2	-12.9	433.8	-4.9	428.3	-6.1
12	475.5	417.1	-12.3	454.8	-4.4	453.2	-4.7
14	493.2	425.5	-13.7	464.7	-5.8	466.2	-5.5
16	502.9	442.4	-12.0	485.0	-3.6	484.2	-3.7
18	515.3	452.7	-12.2	495.0	-3.9	495.0	-3.9
20	526.8	465.0	-11.7	508.9	-3.4	508.0	-3.6
22	542.3	474.6	-12.4	522.5	-3.6	521.1	-3.9
24	550.4	483.7	-12.1	532.1	-3.3	531.9	-3.4
26	561.0	489.0	-12.8	541.4	-5.5	541.1	-3.5
28	567.5	500.1	-11.9	552.4	-2.7	553.0	-2.6
30	576.3	510.5	-11.4	561.3	-2.6	561.9	-2.5
32	580.6	515.9	-11.1	569.2	-2.0	570.1	-1.8
34	582.9	507.1	-13.0	567.1	-2.7	566.3	-2.8
36	591.0	518.8	-12.2	576.8	-2.4	575.8	-2.6
38	599.4	524.9	-12.4	578.2	-3.5	578.0	-3.6
40	608.4	530.4	-12.8	586.8	-3.6	588.7	-3.2
42	612.9	536.5	-12.4	592.0	-3.4	590.7	-3.6
44	619.8	541.7	-12.6	598.8	-3.4	595.9	-3.9
46	623.5	548.8	-12.0	604.8	-3.0	601.3	-3.6
48	626.1	552.3	-11.8	611.0	-2.4	605.2	-3.3
50	639.2	559.9	-12.4	619.1	-3.1	614.1	-3.9
52	638.6	566.7	-11.2	623.8	-2.3	618.1	-3.2

Table 2 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Body Weights (g) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	654.3	573.4	-12.4	627.3	-4.1	620.7	-5.1
56	661.6	579.0	-12.5	633.5	-4.2	625.7	-5.4
58	668.0	583.6	-12.6	634.6	-5.0	635.2	-4.9
60	673.2	584.5	-13.2	637.3	-5.3	639.4	-5.0
62	674.4	589.2	-12.6	640.3	-5.1	641.2	-4.9
64	664.5	589.5	-11.3	641.7	-3.4	642.8	-3.3
66	650.8	591.0	- 9.2	644.7	-0.9	646.0	-0.7
68	656.6	592.9	- 9.7	646.2	-1.6	650.6	-9.1
70	661.9	601.2	- 9.2	650.5	-1.7	650.5	-1.7
72	658.3	592.1	-10.1	640.5	-2.7	642.9	-2.3
74	660.8	588.1	-11.0	638.7	-3.3	641.6	-2.9
76	667.7	600.2	-10.1	651.9	-2.4	648.3	-2.9
78	668.8	598.9	-10.5	654.8	-2.1	650.6	-2.7
80	670.6	607.2	- 9.5	656.5	-2.1	652.5	-2.7
82	663.1	602.6	- 9.1	657.5	-0.8	648.8	-2.2
84	668.1	612.3	- 8.4	657.3	-1.6	648.9	-2.9
86	675.6	610.2	- 9.7	653.4	-3.3	653.4	-3.3
88	678.9	613.4	- 9.6	648.2	-4.5	655.9	-3.4
90	690.0	617.7	-10.5	646.9	-6.2	656.8	-4.8
92	686.0	610.9	-10.9	644.7	-6.0	655.4	-4.5
94	678.3	595.3	-12.2	634.3	-6.5	657.3	-3.1
96	677.5	592.6	-12.5	630.9	-6.9	651.1	-3.9
98	675.7	594.2	-12.1	627.6	-7.1	649.2	-3.9
100	671.1	594.7	-11.4	630.0	-6.1	642.1	-4.3
102	665.9	588.8	-11.6	629.0	-5.5	651.1	-2.2
104	642.0	568.6	-11.4	628.9	-2.0	645.6	+0.6

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Table 3

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats

Summary of Mean Body Weights (g) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
0	138.2	138.7	+ 0.4	135.8	-1.7	135.6	-1.9
2	159.2	168.5	+ 5.8	163.3	+2.6	158.3	-0.6
4	209.5	211.4	+ 0.9	213.6	+2.0	211.0	+0.7
6	238.7	224.6	- 6.0	234.3	-1.8	237.9	-0.3
8	256.9	237.7	- 7.4	252.0	-2.0	256.8	0.0
10	269.2	243.2	- 9.7	261.6	-2.8	260.8	-3.1
12	279.5	241.6	-13.6	264.4	-5.4	270.4	-3.3
14	289.7	251.1	-13.3	275.0	-5.1	283.2	-2.2
16	291.8	256.9	-12.0	283.4	-2.9	291.7	0.0
18	306.8	263.2	-14.2	292.3	-4.7	301.8	-1.6
20	311.6	269.4	-13.5	299.3	-3.9	308.0	-1.2
22	319.1	273.2	-14.4	303.5	-4.9	317.0	-0.7
24	324.5	278.1	-14.3	310.3	-4.4	323.1	-0.4
26	327.3	279.9	-14.5	312.9	-4.4	327.7	+0.1
28	333.7	285.0	-14.6	321.7	-3.6	332.5	-0.4
30	338.3	282.2	-16.6	318.6	-5.8	332.7	-1.7
32	345.5	289.8	-16.1	325.7	-5.7	337.6	-2.3
34	350.7	292.1	-16.7	331.6	-5.4	342.1	-2.4
36	355.5	300.5	-15.4	337.8	-5.0	351.6	-1.1
38	359.3	302.1	-15.9	341.5	-5.0	358.3	-0.3
40	363.2	306.3	-15.7	345.4	-4.9	359.6	-1.0
42	371.2	311.4	-16.1	353.7	-4.7	369.3	-0.5
44	380.1	313.9	-17.4	358.3	-6.0	376.3	-1.0
46	385.7	317.8	-17.6	363.8	-5.7	379.6	-1.6
48	392.3	321.1	-18.1	368.6	-6.0	386.9	-1.4
50	398.6	324.6	-18.6	373.9	-6.2	391.3	-1.8
52	406.1	328.8	-19.0	379.3	-6.6	400.5	-1.4

Table 3 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Body Weights (g) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	414.1	334.2	-19.3	388.0	-6.3	407.6	-1.6
56	419.1	340.9	-18.7	396.0	-5.5	412.6	-1.6
58	420.9	346.9	-17.6	404.1	-4.0	421.8	+0.2
60	423.6	350.0	-17.4	408.0	-3.7	423.9	0.0
62	426.6	351.0	-17.7	411.5	-3.5	425.6	-0.2
64	426.1	351.8	-17.4	416.5	-2.3	429.0	+0.7
66	424.9	350.4	-17.5	413.7	-2.6	425.5	+0.1
68	427.5	357.7	-19.5	422.4	-1.2	434.7	+1.7
70	431.4	360.8	-16.4	423.5	-1.8	440.6	+2.1
72	435.2	366.4	-15.8	429.9	-1.2	449.9	+3.4
74	446.5	371.4	-16.8	435.1	-2.6	455.9	+2.1
76	455.2	373.4	-18.0	442.1	-2.9	458.2	+0.7
78	464.8	369.3	-20.5	438.3	-5.7	458.7	-1.3
80	474.9	378.7	-20.3	444.9	-6.3	466.9	-1.7
82	484.0	378.2	-21.9	436.4	-9.8	467.1	-3.5
84	484.8	383.9	-20.8	443.8	-8.5	475.7	-1.9
86	492.7	378.3	-23.2	443.9	-9.9	490.2	-0.5
88	499.1	389.7	-21.9	445.5	-10.7	486.9	-2.4
90	500.6	389.7	-22.2	442.1	-11.7	494.6	-1.2
92	512.5	392.6	-23.4	448.9	-12.4	487.1	-5.0
94	505.7	399.1	-21.1	440.1	-13.0	486.1	-3.9
96	506.9	402.6	-20.6	445.6	-12.1	499.3	-1.5
98	500.0	402.6	-19.5	444.9	-11.0	494.6	-1.1
100	501.2	396.9	-20.8	435.5	-13.1	492.1	-1.8
102	503.6	402.3	-20.1	438.6	-12.9	490.4	-2.6
104	502.0	397.8	-20.8	425.2	-15.3	484.5	-3.5

G01517

Table 4

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption Per Kilogram Body Weight
(g of diet consumed per day) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
1	102.0	100.7	- 1.3	100.9	- 1.1	102.4	+ 0.4
2	85.2	89.4	+ 4.9	90.2	+ 5.9	91.5	+ 7.4
4	76.4	74.5	- 2.5	77.4	+ 1.3	77.4	+ 1.3
6	69.4	62.7	- 9.7	65.4	- 5.8	63.3	- 8.8
8	61.5	65.4	+ 6.3	65.0	+ 5.7	64.3	+ 4.6
10	53.7	60.2	+12.1	60.2	+12.1	60.8	+13.2
12	50.7	55.8	+10.1	58.7	+15.8	55.7	+ 9.9
14	51.7	51.3	- 0.8	51.2	- 1.0	51.1	- 1.2
16	48.0	52.3	+ 9.0	50.1	+ 4.4	50.9	+ 6.0
18	46.8	50.1	+ 7.1	49.0	+ 4.7	48.9	+ 4.5
20	46.9	50.8	+ 8.3	49.1	+ 4.7	49.0	+ 4.5
22	44.9	50.1	+11.6	49.5	+10.2	48.5	+ 8.0
24	45.0	47.4	+ 5.3	46.3	+ 2.9	46.3	+ 2.9
26	43.7	45.4	+ 3.9	44.0	+ 0.7	42.6	- 2.5
28	42.8	47.3	+10.5	45.0	+ 5.1	43.2	+ 0.9
30	43.2	45.0	+ 4.2	43.9	+ 1.6	43.1	+ 0.2
32	42.9	43.2	+ 0.7	42.2	+ 1.6	41.5	- 3.3
34	41.8	41.4	- 1.0	39.8	- 4.8	38.6	- 7.7
36	38.4	44.8	+16.7	42.9	+11.7	42.4	+10.4
38	40.7	44.5	+ 9.3	42.5	+ 4.4	42.7	+ 4.9
40	39.5	44.3	+12.2	43.1	+ 9.1	42.6	+ 7.9
42	39.3	45.7	+16.3	45.4	+15.5	43.9	+11.7
44	38.9	45.0	+15.7	42.6	+ 9.5	41.8	+ 7.5
46	39.0	43.4	+11.3	42.3	+ 8.5	40.9	+ 4.9
48	39.0	42.7	+ 9.5	41.7	+ 6.9	41.3	+ 5.9
50	38.5	42.5	+10.4	40.7	+ 5.7	40.2	+ 4.4
52	36.5	40.6	+11.2	38.2	+ 4.7	32.8	-10.1

001518

Table 4 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption Per Kilogram Body Weight
(g of diet consumed per day) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	37.0	41.9	+13.2	40.2	+ 8.7	39.2	+ 6.0
56	36.6	41.1	+12.3	39.8	+ 8.7	38.4	+ 4.9
58	36.1	41.0	+13.6	39.7	+ 1.7	39.2	+ 8.6
60	35.4	40.4	+14.1	39.1	+10.5	38.5	+ 8.8
62	35.9	40.1	+11.7	38.4	+ 7.0	38.7	+ 7.8
64	31.0	41.4	+33.6	39.6	+27.7	39.2	+26.5
66	36.3	36.2	- 0.3	34.3	- 5.5	34.4	- 5.2
68	32.9	37.1	+12.8	35.3	+ 7.3	35.7	+ 8.5
70	32.6	40.1	+23.0	37.7	+15.6	36.4	+11.7
72	33.0	40.9	+23.9	38.7	+17.3	38.1	+15.5
74	34.4	41.8	+21.5	40.1	+16.6	40.7	+18.3
76	37.1	40.7	+ 9.7	39.4	+ 6.2	38.7	+ 4.3
78	36.6	37.6	+ 2.7	36.5	- 0.3	37.2	+ 1.6
80	34.6	39.5	+14.2	37.5	+ 8.4	38.2	+10.4
82	36.3	40.2	+10.7	36.4	+ 0.3	37.0	+ 1.9
84	35.6	34.8	- 2.3	33.3	- 6.5	33.6	- 5.6
86	35.1	40.3	+14.8	41.6	+18.5	39.6	+12.8
88	34.8	41.1	+18.1	39.2	+12.6	39.2	+12.6
90	34.9	39.3	+12.6	38.5	+10.3	39.3	+12.6
92	35.1	39.5	+12.5	39.7	+13.1	38.6	+10.0
94	38.5	40.7	+ 5.7	40.7	+ 5.7	40.0	+ 3.9
96	37.1	41.5	+11.9	40.6	+ 9.4	37.0	- 0.3
98	37.3	41.4	+11.0	39.4	+ 5.6	39.4	+ 5.6
100	36.7	41.9	+14.2	40.3	+ 9.8	40.0	+ 9.0
102	35.0	40.9	+16.9	39.9	+14.0	40.6	+16.0
104	33.8	39.0	+15.4	38.5	+13.9	37.8	+11.8

001519

Table 5

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption Per Kilogram of Body Weight
(g of diet consumed per day) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
1	98.8	96.4	- 2.4	98.2	- 0.6	99.6	+ 0.8
2	107.0	101.3	- 5.3	102.9	- 3.8	106.2	- 0.8
4	97.2	80.3	-17.4	82.9	-14.7	93.1	- 4.2
6	81.0	73.6	- 9.1	79.0	- 2.5	85.3	+ 5.3
8	74.1	74.8	+ 0.9	72.3	- 2.4	78.2	+ 5.5
10	72.6	70.9	- 2.3	70.4	- 3.0	81.7	+12.5
12	70.2	67.0	- 4.6	67.0	- 4.6	71.4	+ 1.7
14	64.2	64.0	- 0.3	66.7	+ 3.9	69.3	+ 7.9
16	57.2	63.1	+10.3	64.3	+12.4	63.9	+11.7
18	64.3	66.3	+ 3.1	65.8	+ 2.3	67.0	+ 4.2
20	63.4	64.1	+ 1.1	66.2	+ 4.4	65.9	+ 3.9
22	58.6	61.9	+ 5.6	61.5	+ 5.0	61.2	+ 4.4
24	59.5	60.4	+ 1.5	60.6	+ 1.9	58.5	- 1.7
26	57.0	58.5	+ 2.6	57.4	+ 0.7	56.0	- 1.8
28	61.7	58.6	- 5.0	55.9	- 9.4	57.7	- 6.5
30	59.7	57.2	- 4.2	53.5	-10.4	55.2	- 7.5
32	58.4	58.1	- 0.5	55.4	- 5.1	56.4	- 3.4
34	52.9	53.1	+ 0.4	49.5	- 6.4	50.5	- 4.5
36	56.7	59.2	+ 4.4	56.5	- 0.4	58.9	+ 3.9
38	56.8	58.6	+ 3.2	55.6	- 2.1	57.2	+ 0.7
40	58.4	60.1	+ 2.9	57.6	- 1.4	59.0	+ 1.0
42	54.2	57.5	+ 6.1	53.4	- 1.5	56.3	+ 3.9
44	54.7	55.4	+ 1.3	53.0	- 3.1	53.4	- 2.4
46	48.5	54.1	+11.6	52.5	+ 8.3	50.8	+ 4.7
48	49.2	53.6	+ 8.9	55.3	+12.4	52.0	+ 5.7
50	51.4	49.6	- 3.5	50.8	- 1.2	51.6	+ 0.4
52	48.3	53.2	+10.1	49.8	+ 3.1	49.4	+ 2.3

001520

Table 5 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption Per Kilogram of Body Weight
(g of diet consumed per day) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	48.1	54.2	+12.7	50.0	+ 4.0	50.1	+ 4.2
56	51.5	53.7	+ 4.3	49.5	- 3.9	50.4	- 2.1
58	46.3	51.3	+10.8	46.3	0	45.8	- 1.1
60	49.6	50.9	+ 2.6	46.8	- 5.7	46.0	- 7.3
62	47.1	51.0	+ 8.3	46.7	- 0.9	46.1	- 2.1
64	48.4	45.5	- 6.0	41.8	-13.6	41.7	-13.8
66	41.0	45.1	+10.0	40.1	- 2.2	38.1	- 7.1
68	44.9	52.0	+15.8	48.3	+ 7.8	44.2	- 1.6
70	46.1	52.7	+14.3	49.1	+ 6.5	45.9	- 0.4
72	45.3	53.2	+17.4	49.3	+ 8.8	51.6	+13.9
74	48.4	51.4	+ 6.2	46.0	- 5.0	46.5	- 3.9
76	48.3	48.2	- 0.2	45.5	- 5.8	41.0	-15.1
78	44.1	55.0	+24.7	47.2	+ 7.0	44.5	+ 0.9
80	45.7	48.3	+ 5.7	45.4	- 0.7	39.6	-13.4
82	44.0	45.0	+ 2.3	42.4	- 3.6	45.0	+ 2.3
84	43.5	47.9	+10.1	46.6	+ 7.1	43.9	+ 0.9
86	44.3	48.4	+ 9.3	46.6	+ 5.2	44.9	+ 1.4
88	45.3	50.6	+11.7	48.7	+ 7.5	42.7	- 5.7
90	46.1	48.2	+ 4.6	48.9	+ 6.1	43.5	- 5.6
92	45.9	50.4	+ 9.8	49.9	+ 8.7	42.5	- 7.4
94	46.9	51.4	+ 9.6	51.4	+ 9.6	46.3	- 1.3
96	42.4	53.7	+26.7	54.1	+27.6	47.1	+11.1
98	46.8	51.7	+10.5	56.4	+20.5	44.5	- 4.9
100	41.5	51.9	+25.1	56.3	+35.7	52.4	+26.3
102	42.5	48.5	+14.1	57.5	+35.3	46.5	+ 9.4
104	41.6	46.8	+12.5	52.5	+26.2	40.5	- 2.6

001521

Table 6

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption - Absolute
(g/rat/day) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
1	22.2	21.8	- 1.8	22.4	+ 0.9	22.2	± 0.0
2	23.1	22.7	- 1.7	23.7	+ 2.6	23.6	+ 2.2
4	25.5	23.0	- 9.8	25.3	- 0.8	24.9	- 2.4
6	27.1	20.9	-22.9	23.6	-12.9	22.5	-17.0
8	26.4	24.2	- 8.3	26.3	- 0.4	25.4	- 3.8
10	24.5	23.9	- 2.5	26.1	+ 6.5	26.0	+ 6.1
12	24.1	23.3	- 3.3	26.7	+10.8	25.3	+ 5.0
14	25.5	21.8	-14.5	23.8	- 6.7	23.8	- 6.7
16	24.1	23.2	- 3.7	24.3	+ 0.8	24.7	+ 2.5
18	24.1	22.7	- 5.8	24.2	+ 0.4	24.2	+ 0.4
20	24.7	23.6	- 4.5	25.0	+ 1.2	24.9	+ 0.8
22	24.3	23.8	- 2.1	25.9	+ 6.6	25.3	+ 4.1
24	24.8	22.9	- 7.7	24.7	- 0.4	24.6	+ 0.8
26	24.5	22.2	- 9.4	23.8	- 2.9	23.0	- 6.1
28	24.3	23.6	- 2.9	24.9	+ 2.5	23.9	- 1.7
30	24.9	23.0	- 7.6	24.6	- 1.2	24.2	- 2.8
32	24.9	22.3	-10.4	24.0	- 3.6	23.7	- 4.8
34	24.3	21.0	-13.6	22.6	- 7.0	21.9	- 9.9
36	22.7	23.2	+ 2.2	24.8	+ 9.3	24.4	+ 7.5
38	24.4	23.4	- 4.1	24.6	+ 0.8	24.7	+ 1.2
40	24.0	23.5	- 2.1	25.3	+ 5.4	25.1	+ 4.6
42	24.1	24.5	+ 1.7	26.9	+11.6	25.9	+ 7.5
44	24.1	24.4	+ 1.2	25.5	+ 5.8	24.9	+ 3.3
46	24.3	23.7	- 2.1	25.6	+ 5.4	24.6	+ 1.2
48	24.4	23.6	- 3.3	25.5	+ 4.5	25.0	+ 2.5
50	24.6	23.8	- 3.3	25.2	+ 2.4	24.7	+ 0.4
52	23.3	23.0	- 1.3	23.8	+ 2.2	20.3	-12.9

001522

Table 6 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption - Absolute
(g/rat/day) ± % Difference from Control

MALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	24.2	24.0	- 0.8	25.2	+ 4.1	24.3	+ 0.4
56	24.2	23.8	- 1.7	25.2	+ 4.1	24.0	- 0.8
58	24.1	23.9	- 0.8	25.2	+ 4.6	24.9	+ 3.3
60	23.8	23.6	- 0.8	24.9	+ 4.6	24.6	+ 3.4
62	24.2	23.6	- 2.5	24.6	+ 1.7	24.8	+ 2.5
64	20.6	24.4	+18.4	25.4	+23.3	25.2	+22.3
66	23.6	21.4	- 9.3	22.1	- 6.4	22.2	- 5.9
68	21.6	22.0	+ 1.9	22.8	+ 5.6	23.2	+ 7.4
70	21.6	24.1	+11.6	24.5	+13.4	23.7	+ 9.7
72	21.7	24.2	+11.5	24.8	+14.3	24.5	+12.9
74	22.7	24.6	+ 8.4	25.6	+12.8	26.1	+15.0
76	24.8	24.4	- 1.6	25.7	+ 3.6	25.1	+ 1.2
78	24.5	22.5	- 8.2	23.9	- 2.5	24.2	- 1.2
80	23.2	24.0	+ 3.5	24.6	+ 6.0	24.9	+ 7.3
82	24.1	24.2	+ 0.4	23.9	- 0.8	24.0	- 0.4
84	23.8	21.3	-10.5	21.9	- 8.0	21.8	- 8.4
86	23.7	24.6	+ 3.8	27.2	+14.8	25.9	+ 9.3
88	23.6	25.2	+ 6.8	25.4	+ 7.6	25.7	+ 8.9
90	24.1	24.3	+ 0.8	24.9	+ 3.3	25.8	+ 7.1
92	24.1	24.1	± 0.0	25.6	+ 6.2	25.3	+ 5.0
94	26.1	24.2	- 7.3	25.8	- 1.2	26.3	+ 0.8
96	25.1	24.6	- 2.0	25.6	+ 2.0	24.1	- 4.0
98	25.2	24.6	- 2.4	24.7	- 2.0	25.6	+ 1.6
100	24.6	24.9	+ 1.2	25.4	+ 3.3	25.7	+ 4.5
102	23.3	24.1	+ 3.4	25.1	+ 7.7	26.4	+13.3
104	21.7	22.2	+ 2.3	24.2	+11.5	24.4	+12.4

001523

Table 7

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption - Absolute
(g/rat/day) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
1	13.5	14.0	+ 3.7	13.9	+ 3.0	13.9	+ 3.0
2	17.0	17.1	+ 0.6	16.8	- 1.2	16.8	- 1.2
4	20.4	17.0	-16.7	17.7	-13.2	19.6	- 3.9
6	19.3	16.5	-14.5	18.5	- 4.2	20.3	+ 5.2
8	19.0	17.8	- 6.3	18.2	- 4.2	20.1	+ 5.8
10	19.5	17.2	-11.8	18.4	- 5.6	21.3	+ 9.2
12	19.6	16.2	-17.4	17.7	- 9.7	19.3	- 1.5
14	18.6	16.1	-13.4	18.3	- 1.6	19.6	+ 5.4
16	16.7	16.2	- 3.0	18.2	+ 9.0	18.7	+12.0
18	19.7	17.4	-11.7	19.2	- 2.5	20.2	+ 2.5
20	19.8	17.3	-12.6	19.8	± 0.0	20.3	+ 2.5
22	18.7	16.9	- 9.6	18.7	± 0.0	19.4	+ 3.7
24	19.3	16.8	-13.0	18.8	- 2.6	18.9	- 2.1
26	18.7	16.4	-12.3	18.0	- 3.7	18.3	- 2.1
28	20.6	16.7	-18.9	18.0	-12.6	19.2	- 6.8
30	20.2	16.2	-19.8	17.0	-15.8	18.4	- 8.9
32	20.2	16.8	-16.8	18.0	-10.9	19.0	- 5.9
34	18.5	15.5	-16.2	16.4	-11.4	17.3	- 6.5
36	20.2	17.8	-11.9	19.1	- 5.5	20.7	+ 2.5
38	20.4	17.7	-13.2	19.0	- 6.9	20.5	+ 0.5
40	21.2	18.4	-13.2	19.9	- 6.1	21.2	± 0.0
42	20.1	17.9	-11.0	18.9	- 6.0	20.8	+ 3.5
44	20.8	17.4	-16.4	19.0	- 8.7	20.1	- 3.4
46	18.7	17.2	- 8.0	19.1	+ 2.1	19.3	+ 3.2
48	19.3	17.2	-10.9	20.4	+ 5.7	20.1	+ 4.2
50	20.5	16.1	-21.5	19.0	- 7.3	20.2	- 1.5
52	19.6	17.5	-10.7	18.9	- 3.6	19.8	+ 1.0

Table 7 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Mean Food Consumption - Absolute
(g/rat/day) ± % Difference from Control

FEMALES

Study Week	Control Mean Wt.	100 ppm Mean Wt.	% Diff.	30 ppm Mean Wt.	% Diff.	10 ppm Mean Wt.	% Diff.
54	19.9	18.1	- 9.1	19.4	- 2.5	20.4	+ 2.5
56	21.6	18.3	-15.3	19.6	- 9.3	20.8	- 3.7
58	19.5	17.8	- 8.7	18.7	- 4.1	19.3	- 1.0
60	21.0	17.8	-15.2	19.1	- 9.1	19.5	- 7.1
62	20.1	17.9	-11.0	19.2	- 4.5	19.6	- 2.5
64	20.6	16.0	-22.3	17.4	-15.5	17.9	-13.1
66	17.4	15.8	- 9.2	16.6	- 4.6	16.2	- 6.9
68	19.2	18.6	- 3.1	20.4	+ 6.3	19.2	+ 0.0
70	19.9	19.0	- 4.5	20.8	+ 4.5	20.2	+ 1.5
72	19.7	19.5	- 1.0	21.2	+ 7.6	23.2	+17.8
74	21.6	19.1	-11.6	20.0	- 7.4	21.2	- 1.9
76	22.0	18.0	-18.2	20.1	- 8.6	18.8	-14.6
78	20.5	20.3	- 1.0	20.7	+ 1.0	20.4	- 0.5
80	21.7	18.3	-15.7	20.2	- 6.9	18.5	-14.8
82	21.3	17.0	-20.2	18.5	-13.2	21.0	- 1.4
84	21.1	18.4	-12.8	20.7	- 1.9	20.9	- 1.0
86	21.8	18.3	-16.1	20.7	- 5.1	22.0	+ 0.9
88	22.6	19.7	-12.8	21.7	- 4.0	20.8	- 8.0
90	23.1	18.8	-18.6	21.6	- 6.5	21.5	- 6.9
92	23.5	19.8	-15.7	22.4	- 4.7	20.7	-11.9
94	23.7	20.5	-13.5	22.6	- 4.6	22.5	- 5.1
96	21.5	21.6	+ 0.5	24.1	+12.1	23.5	+ 9.3
98	23.4	20.8	-11.1	25.1	+ 6.8	22.0	- 6.0
100	20.8	20.6	- 1.0	24.5	+17.8	25.8	+24.0
102	21.4	19.5	- 8.9	25.2	+17.8	22.8	+ 6.5
104	20.9	18.6	-11.0	22.3	+ 6.7	19.6	- 6.2

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Table 8

Estimated Mean FM-3924 (mg/kg)

Consumption Per Day

Study Week	100 ppm		30 ppm		10 ppm	
	Male	Female	Male	Female	Male	Female
1	10.1	9.6	3.0	3.0	1.0	1.0
2	8.9	10.1	2.7	3.1	0.9	1.1
4	7.5	8.0	2.3	2.5	0.8	0.9
6	6.3	7.4	2.0	2.4	0.6	0.9
8	6.5	7.5	2.0	2.2	0.6	0.8
10	6.0	7.1	1.8	2.1	0.6	0.8
12	5.6	6.7	1.8	2.0	0.6	0.7
14	5.1	6.4	1.5	2.0	0.5	0.7
16	5.2	6.3	1.5	1.9	0.5	0.6
18	5.0	6.6	1.5	2.0	0.5	0.7
20	5.1	6.4	1.5	2.0	0.5	0.7
22	5.0	6.2	1.5	1.8	0.5	0.6
24	4.7	6.0	1.4	1.8	0.5	0.6
26	4.5	5.9	1.3	1.7	0.4	0.6
28	4.7	5.9	1.4	1.7	0.4	0.6
30	4.5	5.7	1.3	1.6	0.4	0.6
32	4.3	5.8	1.3	1.7	0.4	0.6
34	4.1	5.3	1.2	1.5	0.4	0.5
36	4.5	5.9	1.3	1.7	0.4	0.6
38	4.5	5.9	1.3	1.7	0.4	0.6
40	4.4	6.0	1.3	1.7	0.4	0.6
42	4.6	5.8	1.4	1.6	0.4	0.6
44	4.5	5.5	1.3	1.6	0.4	0.5
46	4.3	5.4	1.3	1.6	0.4	0.5
48	4.3	5.4	1.3	1.7	0.4	0.5
50	4.3	5.0	1.2	1.5	0.4	0.5
52	4.1	5.3	1.1	1.5	0.3	0.5
54	4.2	5.4	1.2	1.5	0.4	0.5
56	4.1	5.4	1.2	1.5	0.4	0.5
58	4.1	5.1	1.2	1.4	0.4	0.5
60	4.0	5.1	1.2	1.4	0.4	0.5
62	4.0	5.1	1.2	1.4	0.4	0.5
64	4.1	4.6	1.2	1.3	0.4	0.4
66	3.6	4.5	1.0	1.2	0.3	0.4
68	3.7	5.2	1.1	1.5	0.4	0.4
70	4.0	5.3	1.1	1.5	0.4	0.5

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Table 8 (concluded)

Estimated Mean FM-3924 (mg/kg)

Consumption Per Day

Study Week	100 ppm		30 ppm		10 ppm	
	Male	Female	Male	Female	Male	Female
72	4.1	5.3	1.2	1.5	0.4	0.5
74	4.2	5.1	1.2	1.4	0.4	0.5
76	4.1	4.8	1.2	1.4	0.4	0.4
78	3.8	5.5	1.1	1.4	0.4	0.4
80	4.0	4.8	1.1	1.4	0.4	0.4
82	4.0	4.5	1.1	1.3	0.4	0.5
84	3.5	4.8	1.0	1.4	0.3	0.4
86	4.0	4.8	1.3	1.4	0.4	0.5
88	4.1	5.1	1.2	1.5	0.4	0.4
90	3.9	4.8	1.2	1.5	0.4	0.4
92	3.9	5.0	1.2	1.5	0.4	0.4
94	4.1	5.1	1.2	1.5	0.4	0.5
96	4.2	5.4	1.2	1.6	0.4	0.5
98	4.1	5.2	1.2	1.7	0.4	0.5
100	4.2	5.2	1.2	1.7	0.4	0.5
102	4.1	4.9	1.2	1.7	0.4	0.5
104	3.9	4.7	1.2	1.6	0.4	0.4

Table 9

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
MORTALITY DATA

DOSE GROUP	INITIAL NO.	WEEK OF STUDY 1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	49-52	53-56
MALES															
CONTROL 0 PPM	50	0	0	0	0	0	0	0	0	1	0	0	0	0	1
HIGH DOSE 100 PPM	50	0	0	0	1	0	0	0	0	0	0	0	1	1	0
MID DOSE 30 PPM	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOW DOSE 10 PPM	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEMALES															
CONTROL 0 PPM	50	0	0	0	0	0	0	1	0	0	1	0	0	1	1
HIGH DOSE 100 PPM	50	0	0	0	0	0	0	0	0	0	0	0	0	1	0
MID DOSE 30 PPM	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOW DOSE 10 PPM	50	0	0	0	0	0	0	0	0	0	0	0	0	0	1

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Table 9 (Concluded)

TWO YEAR CHRONIC (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
MORTALITY DATA

DOSE GROUP	INITIAL NO.	WEEK OF STUDY 57-60	61-64	65-68	69-72	73-76	77-80	81-84	85-88	89-92	93-96	97-100	101-104	105-108	1-108 WEEK TOTALS NO.	%
MALES																
CONTROL 0 PPM	50	0	1	0	0	1	0	1	4	1	2	1	2	1	16	32
HIGH DOSE 100 PPM	50	0	1	1	1	1	2	3	0	0	4	2	0	1	19	38
MID DOSE 30 PPM	50	0	0	0	1	2	1	1	0	1	2	3	4	0	15	30
LOW DOSE 10 PPM	50	1	0	0	1	1	0	1	3	0	1	1	2	1	12	24
FEMALES																
CONTROL 0 PPM	50	0	3	0	0	1	3	2	2	1	3	5	1	0	25	50
HIGH DOSE 100 PPM	50	0	0	1	1	1	3	1	1	3	2	0	2	0	16	32
MID DOSE 30 PPM	50	1	0	1	1	0	0	3	6	2	5	3	5	0	27	54
LOW DOSE 10 PPM	50	1	0	1	0	2	5	4	2	2	3	3	3	0	27	54

CHI-SQUARE TESTS FOR DOSE GROUP DIFFERENCES FROM CONTROL

DOSE GROUP	MALES CHI-SQUARE	MALES PROB.	FEMALES CHI-SQUARE	FEMALES PROB.
100 PPM	0.18	0.678	2.65	0.099
30 PPM	0.00	1.000	0.04	0.823
10 PPM	0.45	0.512	0.04	0.823

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Table 10

Two Year Oral (Diet) Toxicity - Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Clinical Signs

Observations	Control			100 ppm			30 ppm			10 ppm		
	M	F	%[a]	M	F	%[a]	M	F	%[a]	M	F	%[a]
Initial number of rats	65	65	100.0	65	65	100.0	50	50	100.0	50	50	100.0
Survivors at end of study	34	25	45.4	31	34	50.0	35	23	58.0	38	22	60.0
Mass(es)[b] in various regions	19	38	43.8	13	21	26.2	12	33	45.0	13	36	49.0
(Mass(es) resolved prior to termination)	(11)	(7)	(13.9)	(6)	(3)	(6.9)	(7)	(3)	(10.0)	(9)	(11)	(20.0)
Alopecia in various areas	6	14	15.4	6	17	17.7	9	12	21.0	5	18	23.0
Swollen throat[c]	13	10	15.4	8	3	8.5	4	3	7.0	5	12	17.0
Pale (blanched) eyes and/or appears thin (emaciated)	9	9	13.9	8	6	10.8	13	7	20.0	5	9	14.0
Excessive lacrimation	8	12	15.4	7	1	6.2	6	7	13.0	5	5	10.0
Raised ulcerated lesion on hind foot pad(s)	7	0	5.4	8	1	6.9	18	2	20.0	8	0	8.0
Ataxia	4	2	4.6	8	8	12.3	8	10	18.0	4	7	11.0
Convulsions (clonic)	3	0	2.3	10	1[d]	8.5	3	0	3.0	4	0	4.0
Occasional urinary incontinence and/or hematuria	5	4	6.9	7	6	10.0	3	3	6.0	1	0	1.0
Occasional bloody nares	3	1	3.0	1	0	0.8	2	0	2.0	0	2	2.0

[a] (Incidence in males + incidence in females) /total number of animals in the group x 100
[b] To be detailed in the pathology report
[c] Indication of Sialodacryoadenitis (SDA) viral infection
[d] Also had one incidence of tonic convulsions

001530

Table 10 (concluded)

Two Year Oral (Diet) Toxicity - Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Less Frequently Observed Clinical Signs

Observations	Control		100 ppm		30 ppm		10 ppm	
	M	F	M	F	M	F	M	F
Occasional bloody feces and/or diarrhea	2	0	1	0	2	0	0	0
Occasional episode of dyspnea	1	0	0	0	0	0	1	1
Listing of the head	1	0	1	1	2	2	1	4
Nodule on ear	0	0	1	0	0	0	0	0
Circular ulcerated area on skin	4	3	2	0	1	0	2	2
Swollen (distended) abdomen	0	2	0	1	1	0	2	1
Swelling in inguinal area	1	1	0	0	0	0	0	0
Prolapsed uterus	-	0	-	0	-	2	-	0
Swollen leg and/or foot	3	0	2	1	2	1	2	0
Paresis of hind legs	1	0	1	1	0	0	1	0
Swollen ears	0	0	0	0	0	1	0	0

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TABLE 11

Two Year Oral (Diet) Toxicity - Oncogenicity Study
Of Fluorocarbon FM-3924 In Rats

Summary Of Ophthalmologic Changes

Observations	Eye	Control - 0 ppm M	Control - 0 ppm F	100 ppm M	100 ppm F	30 ppm M	30 ppm F	10 ppm M	10 ppm F
Phthisis Bulbi (Atrophy)	Right	0	1	1	2	3	3	2	1
	Left	0	1	0	1	0	0	0	0
Posterior Subcapsular Cataract(s)	Right	2	0	0	1	0	0	0	0
	Left	2	1	0	1	0	0	0	0
	Bilateral	1	0	0	0	0	0	0	0
Corneal (ocular) Opacity (Diffused; ulcerated; with focal iris staphyloma; enlarged; partially collapsed; with microphthalmos; with pannas)	Right	0	2	1	1	1	0	2	1
	Left	0	2	0	0	1	0	0	0
	Bilateral	0	1	0	0	0	0	1	0

NOTE: Blood samples were taken via the retro-orbital venus plexus from almost all of the above animals with ophthalmologic abnormalities.

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Table 11 (concluded)

Two Year Oral (Diet) Toxicity - Oncogenicity Study
of Fluorocarbon FM-3924 in Rats

Summary of Less Frequently Observed Ophthalmologic Changes

(N) Group	Eye(s)	Description of Abnormality
MALES		
(1) Control	Right	Chronic uveitis (secondary to blood sampling)
(1) Control	Right	Diffused lens opacity - chronic iritis with microphthalmos
(1) Control	Bilateral	Posterior lens opacity
(1) Control	Bilateral	Chronic superficial Keratitis
(1) Control	Bilateral	Very pale choroidal circulation
(1) High Dose	Left	Diffused hyphema
(1) High Dose	Right	Extensive inflammation (post blood sampling)
(1) High Dose	Left	Chronic superficial Keratitis
FEMALES		
(1) Control	Right	Chronic superficial Keratitis
(1) Control	Left	Chronic uveitis with secondary exophthalmia
(1) Control	Right	Dacryadenitis
(1) High Dose	Left	Chronic uveitis
(1) Mid Dose	Right	Diffuse lens opacity with iritis

C01533

TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN LEUKOCYTE VALUES

		LEUKOCYTES (CELLS X 10**3)		NEUTROPHILS (CELLS X 10**3)		LYMPHOCYTES (CELLS X 10**3)		MONOCYTES (CELLS X 10**3)		EOSINOPHILS (CELLS X 10**3)	
	N	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.
MALE											
MONTH 3											
0 PPM	15	12.73	2.074	1.65	0.656	10.72	1.803	0.18	0.196	0.17	0.136
100 PPM	15	15.15*	2.662	2.20	1.325	12.42	2.828	0.29	0.202	0.24	0.205
30 PPM	15	13.85	2.471	2.17	1.155	11.28	1.954	0.26	0.212	0.14	0.115
10 PPM	15	13.73	2.430	2.01	1.336	11.51	2.239	0.06	0.083	0.17	0.140
MONTH 6											
0 PPM	15	10.74	2.423	1.43	0.727	8.85	2.416	0.29	0.180	0.17	0.121
100 PPM	15	11.64	2.270	1.48	1.359	9.74	1.958	0.27	0.253	0.15	0.185
30 PPM	15	13.70*	1.941	1.76	1.097	11.40*	1.840	0.36	0.239	0.17	0.169
10 PPM	14	12.41	2.857	0.72	0.543	11.57*	2.707	0.05#	0.072	0.06	0.123
MONTH 12											
0 PPM	14	7.94	1.572	1.10	0.612	6.35	1.256	0.40	0.216	0.10	0.107
100 PPM	14	8.80	1.849	1.85	0.963	6.44	1.252	0.36	0.236	0.15	0.134
30 PPM	15	8.05	1.695	1.29	0.840	6.17	1.138	0.25	0.218	0.07	0.128
10 PPM	15	7.96	2.791	1.71	1.645	5.82	1.872	0.32	0.285	0.11	0.127
MONTH 18											
0 PPM	15	11.41	7.325	5.06	6.402	5.61	1.504	0.59	0.405	0.16	0.128
100 PPM	15	8.49	3.303	2.06#	1.326	5.83	1.814	0.49	0.420	0.11	0.144
30 PPM	15	8.98	1.217	2.25	1.128	6.01	1.206	0.60	0.232	0.13	0.127
10 PPM	15	10.13	4.123	3.35	3.289	6.14	1.417	0.45	0.267	0.20	0.177
MONTH 24											
0 PPM	15	10.79	7.529	3.72	5.666	6.66	2.140	0.34	0.398	0.08	0.083
100 PPM	15	8.91	3.919	1.45	1.009	7.21	3.718	0.21	0.159	0.05	0.080
30 PPM	15	10.87	4.411	3.28	2.754	7.05	2.916	0.46	0.386	0.09	0.115
10 PPM	15	9.53	3.845	2.96	3.292	6.28	1.844	0.17	0.178	0.12	0.135

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

001534

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN HEMOGRAM VALUES

MALE	N	ERYTHROCYTES (CELLS X 10**6) MEAN	S.DEV.	HEMOGLOBIN (G/DL) MEAN	S.DEV.	HEMATOCRIT (% PACKED CELLS) MEAN	S.DEV.	MCV (MICRONS**3) MEAN	S.DEV.	MCH (PICOGRAMS) MEAN	S.DEV.	MCHC (%) MEAN	S.DEV.
MONTH 3													
0 PPM	15	8.29	0.322	16.4	0.39	45.9	0.96	55	1.9	19.8	0.80	35.6	0.47
100 PPM	15	8.10	0.336	16.1	0.50	45.3	1.35	56	2.4	19.8	0.90	35.4	0.63
30 PPM	15	8.12	0.265	16.2	0.66	45.1	1.68	56	1.6	19.9	0.66	35.8	0.52
10 PPM	15	8.27	0.765	16.6	0.86	46.1	2.17	56	2.9	20.2	0.97	36.0	0.37
MONTH 6													
0 PPM	15	8.42	0.384	15.1	0.94	44.5	2.70	52	4.3	17.9	1.41	33.9	0.77
100 PPM	15	8.21	0.972	14.4	1.58	43.3	4.57	53	2.7	17.6	0.87	33.3	0.70
30 PPM	15	7.39*	0.481	15.4	0.79	45.2	2.31	61*	3.8	20.9*	1.14	34.2	0.94
10 PPM	14	8.39	0.483	15.2	0.60	45.5	1.74	54	1.5	18.1	0.63	33.4	0.67
MONTH 12													
0 PPM	14	8.44	0.554	15.9	1.17	46.7	3.69	55	2.2	18.8	0.84	34.0	0.97
100 PPM	14	8.29	0.429	14.8*	0.46	44.6	2.47	54	2.4	17.8*	0.93	33.1	1.38
30 PPM	15	8.40	0.366	15.8	0.67	46.7	2.31	56	2.4	18.8	0.75	33.7	0.84
10 PPM	15	8.30	0.435	15.7	0.60	45.5	2.13	55	1.9	19.0	0.55	34.5	0.74
MONTH 18													
0 PPM	15	7.48	2.071	15.1	3.12	40.8	9.14	56	6.2	21.0	3.09	37.2	1.53
100 PPM	15	8.19	0.615	15.9	1.08	47.2*	3.71	58#	3.1	19.4	0.99	33.7*	0.94
30 PPM	15	7.63	1.048	15.1	1.69	41.9	5.05	56	2.7	19.9	1.22	36.0*	0.94
10 PPM	15	7.74	0.856	15.3	1.59	41.9	4.66	54	2.3	19.8	0.80	36.5	0.71
MONTH 24													
0 PPM	15	7.84	1.063	14.5	1.59	42.3	5.34	54	3.4	18.6	1.27	34.4	0.89
100 PPM	15	7.77	1.303	14.5	2.21	42.7	6.83	56	2.8	18.7	1.22	34.0	1.44
30 PPM	15	7.88	1.256	14.8	1.84	43.3	5.18	55	3.6	19.0	1.11	34.2	0.68
10 PPM	15	8.36	0.974	15.9	1.75	46.3	6.10	55	3.9	19.0	0.88	34.4	1.56

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

001535

TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=3

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	A1R3518	8.10	16.1	45	55.5556	19.8765	35.7778	12.60	1.3860	10.9620	0.000	0.252
0 PPM	A1R3527	7.77	15.5	44	56.6281	19.9485	35.2273	11.00	1.6500	9.0200	0.110	0.220
0 PPM	A1R3532	8.69	16.5	46	52.9344	18.9873	35.8696	10.00	1.0000	8.9000	0.000	0.100
0 PPM	A1R3534	8.15	16.3	45	55.2147	20.0000	36.2222	13.30	1.3300	11.5710	0.266	0.133
0 PPM	A1R3537	7.71	16.3	45	58.3658	21.1414	36.2222	11.30	2.4860	8.8140	0.000	0.000
0 PPM	A1R3540	8.04	16.7	46	57.2139	20.7711	36.3043	12.50	1.8750	9.8750	0.250	0.500
0 PPM	A1R3542	8.70	16.8	47	54.0230	19.3103	35.7447	12.60	1.3860	10.9620	0.252	0.000
0 PPM	A1R3548	8.13	16.5	47	57.8106	20.2952	35.1064	15.50	2.6350	12.0900	0.620	0.155
0 PPM	A1R3552	8.20	16.6	46	56.0976	20.2439	36.0870	14.00	1.9600	11.4800	0.280	0.280
0 PPM	A1R3559	8.63	16.4	46	53.3024	19.0035	35.6522	11.50	1.0350	10.1200	0.000	0.345
0 PPM	A1R3562	8.73	15.6	45	51.5464	17.8694	34.6667	11.90	2.2610	9.4010	0.119	0.119
0 PPM	A1R3564	8.37	16.6	47	56.1529	19.8327	35.3191	12.60	1.3860	10.8360	0.252	0.126
0 PPM	A1R3565	8.41	16.3	46	54.6968	19.3817	35.4348	9.58	0.7664	8.8136	0.000	0.000
0 PPM	A1R3567	8.24	16.8	47	57.0388	20.3883	35.7447	15.50	2.7900	12.5550	0.000	0.155
0 PPM	A1R3569	8.46	16.6	47	55.5556	19.6217	35.3191	17.00	0.8500	15.4700	0.510	0.170
100 PPM	D1R3701	8.44	16.0	47	55.6872	18.9573	34.0426	19.60	5.4880	12.7400	0.784	0.588
100 PPM	D1R3703	8.62	15.4	43	49.8840	17.8654	35.8140	15.30	1.3770	13.3110	0.153	0.459
100 PPM	D1R3705	8.20	16.5	46	56.0976	20.1220	35.8696	13.80	1.6560	11.3160	0.414	0.414
100 PPM	D1R3706	8.19	15.6	45	54.9451	19.0476	34.6667	16.50	1.9800	14.1900	0.330	0.000
100 PPM	D1R3711	7.91	16.3	47	59.4185	20.6068	34.6809	13.00	1.6900	10.6600	0.390	0.260
100 PPM	D1R3714	7.70	15.3	44	57.1429	19.8701	34.7727	15.60	1.0920	14.1960	0.312	0.000
100 PPM	D1R3719	8.03	16.3	46	57.2852	20.2989	35.4348	18.50	0.9250	16.8350	0.185	0.555
100 PPM	D1R3723	7.40	15.6	44	59.4595	21.0811	35.4545	11.70	1.0530	10.5300	0.117	0.000
100 PPM	D1R3724	8.27	16.2	46	55.6227	19.5889	35.2174	17.60	2.8160	14.0800	0.528	0.176
100 PPM	D1R3727	7.79	15.4	43	55.1990	19.7689	35.8140	18.20	0.7280	16.9260	0.182	0.364
100 PPM	D1R3734	8.65	16.4	46	53.1792	18.9595	35.6522	16.60	2.8220	13.4460	0.166	0.166
100 PPM	D1R3740	7.97	17.1	47	58.9711	21.4555	36.3830	11.30	4.4070	6.4410	0.452	0.000
100 PPM	D1R3748	8.03	16.2	45	56.0399	20.1743	36.0000	12.80	2.0480	10.6240	0.000	0.128
100 PPM	D1R3749	8.04	16.1	45	55.9701	20.0249	35.7778	12.00	2.8800	8.6400	0.120	0.360
100 PPM	D1R3754	8.27	16.4	46	55.6227	19.8307	35.6522	14.80	2.0720	12.4320	0.148	0.148

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=3

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	E1R3767	8.11	15.5	44	54.2540	19.1122	35.2273	16.30	3.0970	12.8770	0.1630	0.163
30 PPM	E1R3770	8.25	16.6	46	55.7576	20.1212	36.0870	12.70	0.6350	11.8110	0.2540	0.000
30 PPM	E1R3771	7.80	16.1	46	58.9744	20.6410	35.0000	9.71	1.4565	8.1564	0.0971	0.000
30 PPM	E1R3773	8.16	16.2	45	55.1471	19.8529	36.0000	12.80	2.0480	10.4960	0.1280	0.128
30 PPM	E1R3774	8.23	17.3	47	57.1081	21.0207	36.8085	11.20	2.3520	8.5120	0.1120	0.224
30 PPM	E1R3778	8.52	16.3	46	53.9906	19.1315	35.4348	18.60	2.6040	15.6240	0.3720	0.000
30 PPM	E1R3780	7.96	16.1	45	56.5327	20.2261	35.7778	14.40	1.4400	12.5280	0.1440	0.288
30 PPM	E1R3783	8.41	16.9	47	55.8859	20.0951	35.9574	16.10	3.8640	11.9140	0.1610	0.161
30 PPM	E1R3787	7.79	15.8	43	55.1990	20.2824	36.7442	11.80	2.1240	9.3220	0.1180	0.236
30 PPM	E1R3790	8.12	16.5	46	56.6502	20.3202	35.8696	12.40	1.1160	11.2840	0.0000	0.000
30 PPM	E1R3791	7.84	15.8	44	56.1224	20.1531	35.9091	16.40	1.9680	13.4480	0.6560	0.328
30 PPM	E1R3796	7.88	14.5	41	52.0305	18.4010	35.3659	16.80	5.0400	10.9200	0.6720	0.168
30 PPM	E1R3800	8.65	16.8	47	54.3353	19.4220	35.7447	12.30	2.0910	9.8400	0.1230	0.246
30 PPM	E1R3801	7.91	15.8	44	55.6258	19.9747	35.9091	13.00	1.9500	10.5300	0.5200	0.000
30 PPM	E1R3806	8.24	16.2	46	55.8252	19.6602	35.2174	13.30	0.7980	11.9700	0.3990	0.133
10 PPM	F1R3811	8.59	16.4	46	53.5506	19.0920	35.6522	11.80	1.8880	9.7940	0.1180	0.000
10 PPM	F1R3815	8.17	16.5	46	56.3035	20.1958	35.8696	12.80	1.1520	11.3920	0.1280	0.128
10 PPM	F1R3818	8.29	16.6	46	55.4885	20.0241	36.0870	13.10	2.4890	10.2180	0.2620	0.131
10 PPM	F1R3822	8.82	17.6	48	54.4218	19.9546	36.6667	16.90	5.4080	11.3230	0.0000	0.169
10 PPM	F1R3824	8.63	16.9	47	54.4612	19.5829	35.9574	9.80	1.5680	7.7420	0.0000	0.490
10 PPM	F1R3831	9.04	17.4	48	53.0973	19.2478	36.2500	14.20	4.5440	9.6560	0.0000	0.000
10 PPM	F1R3832	8.78	16.8	46	52.3918	19.1344	36.5217	14.50	2.4650	11.7450	0.1450	0.145
10 PPM	F1R3834	7.92	16.8	46	58.0808	21.2121	36.5217	13.50	1.8900	11.2050	0.1350	0.270
10 PPM	F1R3836	7.27	15.1	42	57.7717	20.7703	35.9524	14.20	1.4200	12.3540	0.0000	0.426
10 PPM	F1R3838	7.76	15.9	45	57.9897	20.4897	35.3333	11.40	0.9120	10.4880	0.0000	0.000
10 PPM	F1R3839	7.63	16.0	45	58.9777	20.9699	35.5556	16.90	1.8590	15.0410	0.0000	0.169
10 PPM	F1R3840	9.90	18.4	51	51.5152	18.5859	36.0784	11.10	0.9990	9.8790	0.1110	0.111
10 PPM	F1R3844	7.08	15.4	43	60.7345	21.7514	35.8140	18.90	1.8900	16.8210	0.0000	0.189
10 PPM	F1R3847	7.43	16.1	45	60.5653	21.6689	35.7778	14.40	1.1520	13.1040	0.0000	0.144
10 PPM	F1R3852	8.74	17.2	48	54.9199	19.6796	35.8333	12.50	0.5000	11.8750	0.0000	0.125

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=6

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	A1R3519	8.24	15.0	46	55.8252	18.2039	32.6087	7.70	1.3090	6.0830	0.2310	0.0770
0 PPM	A1R3524	8.51	14.4	42	49.3537	16.9213	34.2857	8.98	1.2572	7.6330	0.0000	0.0898
0 PPM	A1R3529	8.23	14.6	44	53.4629	17.7400	33.1818	11.70	1.0530	10.4130	0.2340	0.0000
0 PPM	A1R3533	8.30	15.7	45	54.2169	18.9157	34.8889	9.96	1.5936	7.9680	0.0996	0.2988
0 PPM	A1R3537	8.13	15.9	47	57.8106	19.5572	33.8298	9.14	1.6452	7.0378	0.1828	0.2742
0 PPM	A1R3541	8.42	15.9	46	54.6318	18.8836	34.5652	9.83	0.9830	8.3555	0.1966	0.2949
0 PPM	A1R3547	7.40	14.8	44	59.4595	20.0000	33.6364	14.00	1.2600	12.0400	0.4200	0.2800
0 PPM	A1R3550	8.38	15.4	45	53.6993	18.3771	34.2222	7.71	1.6962	5.6283	0.3855	0.0000
0 PPM	A1R3553	8.30	15.6	46	55.4217	18.7952	33.9130	10.90	3.5970	6.6490	0.4360	0.2180
0 PPM	A1R3557	8.95	13.0	37	41.3408	14.5251	35.1351	13.40	1.7420	11.1220	0.2680	0.2680
0 PPM	A1R3559	9.03	16.2	47	52.0487	17.9402	34.4681	8.20	0.5740	7.0520	0.2460	0.3280
0 PPM	A1R3562	8.58	14.8	45	52.4476	17.2494	32.8889	10.70	1.1770	8.8810	0.5350	0.1070
0 PPM	A1R3567	8.69	16.2	47	54.0852	18.6421	34.4681	11.30	0.3390	10.7350	0.0000	0.2260
0 PPM	A1R3573	8.70	15.0	45	51.7241	17.2414	33.3333	11.30	1.5820	9.0400	0.5650	0.1130
0 PPM	A1R3575	8.44	13.5	41	48.5782	15.9953	32.9268	16.30	1.6300	14.1810	0.4890	0.0000
100 PPM	D1R3696	7.63	12.7	37	48.4928	16.6448	34.3243	15.70	4.7100	9.5770	0.7850	0.6280
100 PPM	D1R3703	8.13	13.8	42	51.6605	16.9742	32.8571	11.80	1.0620	10.5020	0.0000	0.2360
100 PPM	D1R3707	8.31	15.0	44	52.9483	18.0505	34.0909	10.50	1.8900	8.4000	0.1050	0.1050
100 PPM	D1R3710	8.70	14.3	43	49.4253	16.4368	33.2558	8.30	1.3280	6.4740	0.4150	0.0830
100 PPM	D1R3716	8.10	15.3	45	55.5556	18.8889	34.0000	14.20	3.2660	9.7980	0.7100	0.4260
100 PPM	D1R3728	8.93	15.8	47	52.6316	17.6932	33.6170	9.41	0.3764	8.9395	0.0941	0.0000
100 PPM	D1R3731	8.32	14.7	43	51.6827	17.6683	34.1860	13.10	0.6550	12.4450	0.0000	0.0000
100 PPM	D1R3733	9.10	15.4	47	51.6484	16.9231	32.7660	12.50	1.3750	10.8750	0.0000	0.2500
100 PPM	D1R3734	8.37	14.5	44	52.5687	17.3238	32.9545	10.70	0.6420	9.8440	0.1070	0.1070
100 PPM	D1R3736	8.21	14.0	43	52.3752	17.0524	32.5581	11.80	0.5900	11.0920	0.1180	0.0000
100 PPM	D1R3738	8.99	16.1	49	54.5050	17.9088	32.8571	10.50	1.8900	7.8750	0.5250	0.2100
100 PPM	D1R3743	4.99	9.7	30	60.1202	19.4389	32.3333	14.80	0.2960	14.2080	0.2960	0.0000
100 PPM	D1R3746	8.44	15.8	46	54.5024	18.7204	34.3478	8.04	0.4020	7.3968	0.2412	0.0000
100 PPM	D1R3754	8.20	14.7	44	53.6585	17.9268	33.4091	10.30	0.2060	9.6820	0.4120	0.0000
100 PPM	D1R3757	8.70	14.7	45	51.7241	16.8966	32.6667	13.00	3.5100	8.9700	0.2600	0.2600

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=6

DOSE	ANIMAL	FRYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	E1R3762	7.92	16.6	49	61.8687	20.9596	33.8776	14.20	0.8520	12.922	0.4260	0.000
30 PPM	E1R3763	7.43	15.4	45	60.5653	20.7268	34.2222	12.90	1.2900	11.223	0.2580	0.129
30 PPM	E1R3764	7.63	15.4	47	61.5990	20.1835	32.7660	14.20	1.4200	12.212	0.4260	0.142
30 PPM	E1R3765	7.67	15.5	44	57.3664	20.2086	35.2273	14.70	1.9110	11.907	0.5880	0.294
30 PPM	E1R3770	7.38	15.3	44	59.6206	20.7317	34.7727	13.20	1.9800	10.296	0.7920	0.132
30 PPM	E1R3773	6.40	13.7	40	62.5000	21.4062	34.2500	11.90	2.0230	9.520	0.2380	0.119
30 PPM	E1R3774	7.11	15.3	45	63.2911	21.5190	34.0000	11.10	1.6650	9.102	0.3330	0.000
30 PPM	E1R3779	7.59	17.1	49	64.5586	22.5296	34.8980	13.40	2.1440	10.720	0.1340	0.402
30 PPM	E1R3784	7.73	16.1	44	56.9211	20.8279	36.5909	8.95	1.3425	7.339	0.0895	0.179
30 PPM	E1R3792	6.99	14.8	43	61.5165	21.1731	34.4186	17.00	4.5900	11.730	0.6800	0.000
30 PPM	E1R3794	7.78	15.8	47	60.4113	20.3085	33.6170	15.10	1.3590	12.986	0.1510	0.604
30 PPM	E1R3804	7.33	15.0	45	61.3915	20.4638	33.3333	15.00	0.6000	13.950	0.3000	0.150
30 PPM	E1R3806	7.44	15.4	46	61.8280	20.6989	33.4783	14.00	0.4200	13.300	0.1400	0.140
30 PPM	E1R3808	6.46	15.3	46	71.2074	23.6842	33.2609	15.20	3.6480	10.488	0.7600	0.304
30 PPM	E1R3810	8.04	14.9	44	54.7264	18.5323	33.8636	14.60	1.1680	13.286	0.1460	0.000
10 PPM	F1R3811	8.65	15.2	45	52.0231	17.5723	33.7778	12.50	0.7500	11.375	0.0000	0.375
10 PPM	F1R3816	8.03	14.5	45	56.0399	18.0573	32.2222	15.30	0.3060	14.841	0.1530	0.000
10 PPM	F1R3817	8.27	15.5	46	55.6227	18.7424	33.6957	12.80	0.5120	12.160	0.0000	0.128
10 PPM	F1R3823	8.11	15.4	45	55.4871	18.9889	34.2222	13.80	1.6560	12.006	0.1380	0.000
10 PPM	F1R3826	8.30	15.5	46	55.4217	18.6747	33.6957	8.15	0.1630	7.987	0.0000	0.000
10 PPM	F1R3827	9.15	15.6	47	51.3661	17.0492	33.1919	14.60	0.4380	13.870	0.0000	0.292
10 PPM	F1R3831	8.75	15.5	47	53.7143	17.7143	32.9787	18.40	1.1040	17.296	0.0000	0.000
10 PPM	F1R3833	8.48	15.0	46	54.2453	17.6887	32.6087	11.20	0.3360	10.864	0.0000	0.000
10 PPM	F1R3834	8.62	15.7	46	53.3643	18.2135	34.1304	11.90	0.9520	10.948	0.0000	0.000
10 PPM	F1R3837	8.92	15.5	48	53.8117	17.3767	32.2917	11.10	1.8870	8.991	0.1110	0.111
10 PPM	F1R3839	8.46	15.2	45	53.1915	17.9669	33.7778	14.80	0.7400	13.912	0.1480	0.000
10 PPM	F1R3846	7.60	13.9	42	55.2632	18.2895	33.0952	8.45	0.1690	8.112	0.1690	0.000
10 PPM	F1R3853	8.67	16.0	47	54.2099	18.4544	34.0426	11.80	0.9440	10.856	0.0000	0.000
10 PPM	F1R3854	7.40	14.2	42	56.7568	19.1892	33.8095	9.00	0.1800	8.820	0.0000	0.000
10 PPM	F1R3855	.	.	.	.	.	.	.	.	.	.	.

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=12

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	A1R3516	8.33	15.6	48	57.6230	18.7275	32.5000	7.9	1.817	5.293	0.632	0.158
0 PPM	A1R3517	8.07	15.7	45	55.7621	19.4548	34.8889	5.2	0.624	4.420	0.156	0.000
0 PPM	A1R3520	8.49	15.7	45	53.0035	18.4923	34.8889	6.8	0.816	5.440	0.476	0.068
0 PPM	A1R3522	8.47	16.4	47	55.4908	19.3625	34.8936	9.2	0.736	7.728	0.460	0.276
0 PPM	A1R3527	8.84	15.7	46	52.0362	17.7602	34.1304	7.4	0.814	6.068	0.518	0.000
0 PPM	A1R3535	8.47	15.6	45	53.1287	18.4179	34.6667	9.1	2.002	6.097	0.819	0.182
0 PPM	A1R3543	8.97	16.4	48	53.5117	18.2832	34.1667	6.9	0.828	5.796	0.276	0.000
0 PPM	A1R3546	9.47	18.1	55	58.0781	19.1130	32.9091	8.2	0.328	7.298	0.574	0.082
0 PPM	A1R3550	9.12	16.4	51	55.9211	17.9825	32.1569	5.7	0.399	5.073	0.228	0.000
0 PPM	A1R3551	8.48	15.8	47	55.4245	18.6321	33.6170	9.2	1.564	7.268	0.184	0.184
0 PPM	A1R3554	.	.	.	.	.	.	.	.	.	.	.
0 PPM	A1R3568	7.88	15.8	46	58.3756	20.0508	34.3478	8.0	1.520	6.160	0.240	0.080
0 PPM	A1R3570	8.29	16.4	47	56.6948	19.7829	34.8936	7.0	1.260	5.600	0.070	0.070
0 PPM	A1R3575	7.27	12.5	38	52.2696	17.1939	32.8947	9.9	0.495	8.811	0.594	0.000
0 PPM	A1R3580	8.04	15.9	46	57.2139	19.7761	34.5652	10.7	2.140	7.918	0.428	0.321
100 PPM	D1R3696	8.32	13.8	43	51.6827	16.5865	32.0930	9.5	2.470	6.460	0.475	0.095
100 PPM	D1R3699	7.21	14.3	40	55.4785	19.8336	35.7500	9.7	2.231	7.275	0.194	0.000
100 PPM	D1R3711	8.41	15.1	50	59.4530	17.9548	30.2000	9.2	1.932	6.532	0.368	0.368
100 PPM	D1R3714	7.75	14.3	41	52.9032	18.4516	34.8780	8.5	2.210	5.440	0.595	0.255
100 PPM	D1R3715	8.28	15.1	44	53.1401	18.2367	34.3182	11.6	3.712	6.844	0.812	0.232
100 PPM	D1R3720	8.54	15.2	45	52.6932	17.7986	33.7778	6.5	1.300	4.615	0.325	0.260
100 PPM	D1R3721	8.81	15.3	47	53.3485	17.3666	32.5532	11.6	3.248	7.308	0.696	0.348
100 PPM	D1R3722	8.40	14.6	45	53.5714	17.3810	32.4444	8.9	2.136	6.141	0.356	0.267
100 PPM	D1R3727	8.37	15.1	46	54.9582	18.0406	32.8261	7.8	0.702	6.942	0.156	0.000
100 PPM	D1R3732	8.33	15.0	44	52.8211	18.0072	34.0909	8.0	0.640	7.280	0.080	0.000
100 PPM	D1R3733	8.90	14.8	46	51.6854	16.6292	32.1739	8.7	2.001	6.090	0.522	0.087
100 PPM	D1R3736	8.48	14.2	44	51.8868	16.7453	32.2727	4.4	0.660	3.652	0.000	0.088
100 PPM	D1R3737	.	.	.	.	.	.	.	.	.	.	.
100 PPM	D1R3747	7.89	15.2	46	58.3016	19.2649	33.0435	9.1	1.911	6.916	0.273	0.000
100 PPM	D1R3748	8.31	14.6	44	52.9483	17.5692	33.1818	9.7	0.679	8.730	0.194	0.097

001540

TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=12

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	E1R3769	8.51	15.7	49	57.5793	18.4489	32.0408	8.3	1.494	5.893	0.830	0.083
30 PPM	E1R3775	8.68	15.9	47	54.1475	18.3180	33.8298	10.3	2.163	7.622	0.309	0.206
30 PPM	E1R3776	8.79	16.4	50	56.8828	18.6576	32.8000	9.2	2.208	6.348	0.184	0.460
30 PPM	E1R3779	8.50	17.0	50	58.8235	20.0000	34.0000	7.0	1.960	4.550	0.490	0.000
30 PPM	E1R3780	8.47	16.1	46	54.3093	19.0083	35.0000	10.6	2.862	7.208	0.424	0.106
30 PPM	E1R3782	8.60	15.5	46	53.4884	18.0233	33.6957	7.9	0.790	6.873	0.237	0.000
30 PPM	E1R3791	8.70	15.3	45	51.7241	17.5862	34.0000	6.2	0.248	5.890	0.062	0.000
30 PPM	E1R3792	8.41	16.0	47	55.8859	19.0250	34.0426	8.0	1.920	5.760	0.320	0.000
30 PPM	E1R3797	8.90	16.2	49	55.0562	18.2022	33.0612	4.4	0.660	3.564	0.132	0.044
30 PPM	E1R3800	8.15	16.2	46	56.4417	19.8773	35.2174	6.2	0.620	5.456	0.124	0.000
30 PPM	E1R3802	7.72	14.2	42	54.4041	18.3938	33.8095	8.2	1.722	6.150	0.328	0.000
30 PPM	E1R3803	7.94	15.7	48	60.4534	19.7733	32.7083	7.9	1.422	6.399	0.079	0.000
30 PPM	E1R3805	8.67	15.8	47	54.2099	18.2238	33.6170	7.4	0.444	6.956	0.000	0.000
30 PPM	E1R3806	7.86	15.5	46	58.5242	19.7201	33.6957	9.0	0.900	7.650	0.270	0.180
30 PPM	E1R3808	8.03	14.8	43	53.5492	18.4309	34.4186	10.2	0.000	.	0.000	0.000
10 PPM	F1R3812	8.33	15.7	46	55.2221	18.8475	34.1304	13.9	6.950	5.421	1.251	0.278
10 PPM	F1R3813	8.21	16.3	48	58.4653	19.8538	33.9583	11.1	2.109	8.103	0.444	0.444
10 PPM	F1R3814	8.09	15.6	45	55.6242	19.2831	34.6667	6.4	0.128	6.016	0.192	0.064
10 PPM	F1R3815	7.79	15.0	43	55.1990	19.2555	34.8837	5.3	0.795	4.187	0.159	0.159
10 PPM	F1R3818	7.99	15.4	45	56.3204	19.2741	34.2222	11.3	1.017	9.831	0.339	0.113
10 PPM	F1R3820	8.39	15.5	44	52.4434	18.4744	35.2273	8.5	1.955	6.375	0.170	0.000
10 PPM	F1R3828	8.21	15.2	44	53.5932	18.5140	34.5455	6.0	0.420	5.460	0.120	0.000
10 PPM	F1R3832	8.88	16.7	50	56.3063	18.8063	33.4000	7.0	1.750	5.040	0.210	0.000
10 PPM	F1R3833	8.60	16.2	45	52.3256	18.8372	36.0000	6.6	0.528	5.808	0.198	0.066
10 PPM	F1R3835	8.13	15.0	44	54.1205	18.4502	34.0909	6.9	1.311	5.451	0.138	0.000
10 PPM	F1R3839	8.46	15.8	47	55.5556	18.6761	33.6170	8.7	2.262	6.003	0.261	0.174
10 PPM	F1R3844	7.49	15.0	42	56.0748	20.0267	35.7143	11.3	1.921	8.588	0.565	0.226
10 PPM	F1R3846	8.00	15.3	45	56.2500	19.1250	34.0000	7.1	2.769	3.976	0.355	0.000
10 PPM	F1R3848	8.66	16.6	48	55.4273	19.1686	34.5833	4.0	1.160	2.520	0.200	0.120
10 PPM	F1R3860	9.23	16.5	47	50.9209	17.8765	35.1064	5.3	0.530	4.505	0.212	0.053

001541

TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=18

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	A1R3519	8.42	15.3	44	52.2565	18.1710	34.7727	10.0	4.400	4.600	1.000	0.000
0 PPM	A1R3521	2.48	7.2	18	72.5806	29.0323	40.0000	35.4	26.196	7.080	1.770	0.354
0 PPM	A1R3528	8.92	16.5	44	49.3274	18.4978	37.5000	8.7	4.176	4.176	0.261	0.087
0 PPM	A1R3531	8.43	16.9	46	54.5670	20.0474	36.7391	9.1	1.729	6.734	0.546	0.091
0 PPM	A1R3538	8.23	15.9	45	54.6780	19.3196	35.3333	6.1	1.769	3.904	0.244	0.183
0 PPM	A1R3539	8.14	16.4	43	52.8256	20.1474	38.1395	7.3	3.139	3.577	0.438	0.146
0 PPM	A1R3542	8.79	16.8	47	53.4699	19.1126	35.7447	7.8	2.418	4.836	0.468	0.078
0 PPM	A1R3552	8.17	16.8	44	53.8556	20.5630	38.1818	9.9	2.574	6.336	0.594	0.396
0 PPM	A1R3553	8.32	16.9	45	54.0865	20.3125	37.5556	6.7	2.211	3.953	0.402	0.134
0 PPM	A1R3555	7.99	15.8	43	53.8173	19.7747	36.7442	8.7	1.218	6.960	0.435	0.087
0 PPM	A1R3561	9.06	17.6	48	52.9801	19.4260	36.6667	9.7	3.977	4.850	0.485	0.388
0 PPM	A1R3565	4.75	12.3	31	65.2632	25.8947	39.6774	10.5	4.725	4.725	0.945	0.105
0 PPM	A1R3567	8.25	16.4	46	55.7576	19.8788	35.6522	12.1	3.872	8.107	0.121	0.000
0 PPM	A1R3574	3.59	8.9	23	64.0669	24.7911	38.6957	19.4	12.028	6.790	0.388	0.194
0 PPM	A1R3577	8.64	16.7	45	52.0833	19.3287	37.1111	9.7	1.455	7.469	0.679	0.097
100 PPM	D1R3697	7.29	14.1	39	53.4979	19.3416	36.1538	7.8	0.936	6.552	0.312	0.000
100 PPM	D1R3700	8.47	16.2	47	55.4900	19.1263	34.4681	8.4	1.092	7.056	0.084	0.168
100 PPM	D1R3707	7.80	16.4	49	62.8205	21.0256	33.4694	5.9	0.767	4.779	0.354	0.000
100 PPM	D1R3713	9.21	17.4	51	55.3746	18.8925	34.1176	9.0	1.980	6.480	0.540	0.000
100 PPM	D1R3717	7.72	15.4	47	60.8808	19.9482	32.7660	5.1	1.173	3.672	0.153	0.102
100 PPM	D1R3723	7.42	15.0	44	59.2992	20.2156	34.0909	5.7	1.425	4.104	0.171	0.000
100 PPM	D1R3724	7.28	14.0	41	56.3187	19.2308	34.1463	17.9	5.370	10.203	1.790	0.537
100 PPM	D1R3730	8.96	15.9	48	53.5714	17.7455	33.1250	8.1	1.782	5.670	0.486	0.162
100 PPM	D1R3731	7.82	15.2	45	57.5448	19.4373	33.7778	9.2	2.024	6.716	0.368	0.092
100 PPM	D1R3738	8.50	17.0	49	57.6471	20.0000	34.6939	8.3	2.905	4.648	0.581	0.166
100 PPM	D1R3740	7.99	16.6	50	62.5782	20.7760	33.2000	7.0	3.080	3.430	0.420	0.070
100 PPM	D1R3746	8.54	17.2	52	60.8899	20.1405	33.0769	5.0	0.700	4.050	0.250	0.000
100 PPM	D1R3751	8.71	16.8	51	58.5534	19.2882	32.9412	8.1	1.701	5.670	0.648	0.081
100 PPM	D1R3755	8.56	14.9	46	53.7383	17.4065	32.3913	13.2	4.224	7.788	0.924	0.264
100 PPM	D1R3756	8.61	16.3	49	56.9106	18.9315	33.2693	8.7	1.740	6.699	0.261	0.000

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=18

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	F1R3762	7.68	15.4	45	58.5938	20.0521	34.2222	10.2	1.224	8.466	0.510	0.000
30 PPM	E1R3764	8.54	16.2	46	53.8642	18.9696	35.2174	9.2	1.564	6.900	0.552	0.184
30 PPM	E1R3765	7.44	16.2	44	59.1398	21.7742	36.8182	7.8	2.496	4.758	0.390	0.156
30 PPM	F1R3767	8.39	15.6	44	52.4434	18.5936	35.4545	10.5	2.415	7.245	0.735	0.105
30 PPM	E1R3769	8.06	15.6	45	55.8313	19.3548	34.6667	8.1	0.891	6.642	0.567	0.000
30 PPM	E1R3771	7.84	15.2	43	54.8469	19.3878	35.3488	7.2	1.368	5.328	0.504	0.000
30 PPM	E1R3773	7.12	14.0	39	54.7753	19.6629	35.8974	9.1	2.002	5.915	0.910	0.273
30 PPM	E1R3775	8.27	16.1	45	54.4135	19.4680	35.7778	9.8	2.352	6.958	0.392	0.098
30 PPM	E1R3777	8.15	15.3	42	51.5337	18.7730	36.4286	10.4	2.808	6.448	1.040	0.104
30 PPM	E1R3782	4.10	9.4	25	60.9756	22.9268	37.6000	10.0	5.000	3.600	1.000	0.400
30 PPM	E1R3787	7.78	14.9	41	52.6992	19.1517	36.3415	7.3	2.044	4.964	0.292	0.000
30 PPM	E1R3793	7.81	15.8	43	55.0576	20.2305	36.7442	8.1	1.620	5.751	0.405	0.324
30 PPM	E1R3796	7.44	15.5	42	56.4516	20.8333	36.9048	10.5	4.410	5.565	0.420	0.105
30 PPM	E1R3806	7.95	16.3	44	55.3459	20.5031	37.0455	8.9	1.602	6.586	0.534	0.178
30 PPM	E1R3807	7.95	14.8	41	51.5723	18.6164	36.0976	7.6	1.900	5.016	0.684	0.000
10 PPM	F1R3811	8.14	14.9	41	50.3686	18.3047	36.3415	10.2	1.836	7.854	0.408	0.102
10 PPM	F1R3813	8.09	15.8	44	54.3881	19.5303	35.9091	20.5	11.275	7.790	0.820	0.615
10 PPM	F1R3814	7.57	15.7	42	55.4822	20.7398	37.3810	9.1	2.002	6.461	0.546	0.091
10 PPM	F1R3823	7.74	15.1	41	52.9716	19.5090	36.8293	10.8	2.700	7.560	0.324	0.216
10 PPM	F1R3825	8.69	16.6	46	52.9344	19.1024	36.0870	8.8	1.936	6.688	0.176	0.000
10 PPM	F1R3837	8.39	16.2	44	52.4434	19.3087	36.8182	5.5	1.210	4.235	0.055	0.000
10 PPM	F1R3839	8.13	16.0	43	52.8905	19.6802	37.2093	11.1	2.220	7.881	0.555	0.444
10 PPM	F1R3842	7.65	16.1	44	57.5163	21.0458	36.5909	8.5	2.295	5.695	0.255	0.255
10 PPM	F1R3845	5.08	10.5	28	55.1181	20.6693	37.5000	5.4	0.270	4.806	0.324	0.000
10 PPM	F1R3848	8.15	17.2	48	58.8957	21.1043	35.8333	6.2	1.302	3.906	0.682	0.310
10 PPM	F1R3851	7.95	15.3	42	52.8302	19.2453	36.4286	9.6	1.728	7.008	0.576	0.288
10 PPM	F1R3852	8.38	16.0	44	52.5060	19.0931	36.3636	8.1	1.782	6.075	0.000	0.243
10 PPM	F1R3853	7.68	15.3	42	54.6875	19.9219	36.4286	9.4	4.512	3.854	0.846	0.188
10 PPM	F1R3855	7.54	14.9	43	57.0292	19.7613	34.6512	10.9	4.469	5.668	0.763	0.000
10 PPM	F1R3859	6.89	13.3	36	52.2496	19.3033	36.9444	17.8	10.680	6.586	0.356	0.178

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TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=24

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	A1R3518	7.44	13.1	37	49.7312	17.6075	35.4054	13.2	3.036	9.108	0.924	0.132
0 PPM	A1R3524	8.08	14.4	43	53.2178	17.8218	33.4884	6.8	1.632	4.760	0.340	0.068
0 PPM	A1R3528	8.70	15.5	45	51.7241	17.8161	34.4444	7.2	0.432	6.624	0.000	0.144
0 PPM	A1R3531	8.33	16.0	47	56.4226	19.2077	34.0426	8.4	1.092	6.972	0.336	0.000
0 PPM	A1R3534	7.96	15.3	46	57.7889	19.2211	33.2609	36.3	22.506	12.342	1.452	0.000
0 PPM	A1R3538	8.54	15.1	45	52.6932	17.6815	33.5556	7.2	1.584	5.256	0.288	0.072
0 PPM	A1R3542	8.86	16.0	46	51.9187	18.0587	34.7826	7.1	0.710	6.248	0.071	0.071
0 PPM	A1R3548	8.09	15.6	46	56.8603	19.2831	33.9130	8.5	1.445	6.885	0.170	0.000
0 PPM	A1R3554	6.08	11.8	34	55.9211	19.4079	34.7099	4.4	0.264	4.136	0.000	0.000
0 PPM	A1R3557	9.47	16.7	50	52.7983	17.6346	33.4000	8.0	1.840	6.000	0.080	0.080
0 PPM	A1R3562	7.74	13.2	37	47.8036	17.0543	35.6757	12.6	5.922	6.300	0.378	0.000
0 PPM	A1R3564	7.68	14.4	42	54.6875	18.7500	34.2857	12.4	4.712	6.820	0.620	0.248
0 PPM	A1R3569	5.38	12.0	33	61.3383	22.3048	36.3636	9.7	0.776	8.924	0.000	0.000
0 PPM	A1R3573	8.52	16.1	47	55.1643	18.8967	34.2553	7.4	1.554	5.328	0.296	0.222
0 PPM	A1R3578	6.70	12.7	37	55.2239	18.9552	34.3243	12.7	8.255	4.191	0.127	0.127
100 PPM	D1R3700	8.77	15.6	47	53.5918	17.7879	33.1915	7.5	0.450	7.050	0.000	0.000
100 PPM	D1R3702	7.44	13.9	43	57.7957	18.6828	32.3256	10.7	2.568	8.132	0.000	0.000
100 PPM	D1R3706	9.05	16.8	49	54.1436	18.5635	34.2857	6.0	2.220	3.660	0.120	0.000
100 PPM	D1R3709	8.34	14.8	42	50.3597	17.7458	35.2381	11.4	1.026	10.032	0.114	0.228
100 PPM	D1R3713	8.76	16.1	49	55.9361	18.3790	32.8571	8.8	0.440	7.920	0.264	0.176
100 PPM	D1R3718	8.57	15.6	46	53.6756	18.2030	33.9130	6.2	0.248	5.890	0.062	0.000
100 PPM	D1R3725	7.20	13.9	40	55.5556	19.3056	34.7500	6.7	0.804	5.695	0.201	0.000
100 PPM	D1R3730	8.12	14.4	42	51.7241	17.7340	34.2857	12.4	0.744	11.532	0.124	0.000
100 PPM	D1R3739	7.99	16.6	48	60.0751	20.7760	34.5833	4.0	2.400	1.440	0.160	0.000
100 PPM	D1R3741	6.80	12.7	40	58.8235	18.6765	31.7500	15.1	2.869	11.778	0.453	0.000
100 PPM	D1R3746	8.40	16.8	47	55.9524	20.0000	35.7447	4.6	0.230	4.232	0.092	0.046
100 PPM	D1R3752	8.81	15.6	47	53.3485	17.7072	33.1915	5.8	2.262	3.074	0.290	0.174
100 PPM	D1R3755	6.49	11.6	34	52.3883	17.8737	34.1176	17.8	2.136	15.308	0.356	0.000
100 PPM	D1R3758	7.91	14.1	43	54.3616	17.8255	32.7907	7.9	0.632	6.952	0.316	0.000
100 PPM	D1R3760	3.96	8.6	23	58.0808	21.7172	37.3913	8.8	2.728	5.456	0.528	0.088

001544

TABLE 12

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=24

DOSE	ANIMAL	FRYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	E1R3761	5.46	11.2	33	60.4396	20.5128	33.9394	17.1	8.208	7.695	1.026	0.171
30 PPM	E1R3763	8.19	15.5	46	56.1661	18.9255	33.6957	9.0	3.600	4.320	0.900	0.180
30 PPM	E1R3767	8.82	15.9	48	54.4218	18.0272	33.1250	9.3	2.697	6.324	0.279	0.000
30 PPM	E1R3769	8.56	16.1	48	56.0748	18.8084	33.5417	7.0	1.260	5.250	0.420	0.070
30 PPM	E1R3773	7.53	13.9	41	54.4489	18.4595	33.9024	10.9	1.526	8.720	0.436	0.218
30 PPM	E1R3776	5.14	10.6	32	62.2568	20.6226	33.1250	16.2	8.262	6.480	1.296	0.162
30 PPM	E1R3779	7.82	15.8	46	58.8235	20.2046	34.3478	11.3	3.729	7.345	0.226	0.000
30 PPM	E1R3781	7.67	14.2	42	54.7588	18.5137	33.8095	15.7	8.164	6.751	0.785	0.000
30 PPM	E1R3786	8.13	16.4	47	57.8106	20.1722	34.8936	6.5	0.650	5.655	0.130	0.065
30 PPM	E1R3788	8.88	15.9	45	50.6757	17.9054	35.3333	9.1	3.185	5.824	0.091	0.000
30 PPM	E1R3791	8.51	15.9	46	54.0541	18.6839	34.5652	8.2	1.066	6.642	0.410	0.082
30 PPM	E1R3794	9.16	16.0	46	50.2183	17.4672	34.7826	19.7	3.152	16.154	0.000	0.394
30 PPM	E1R3799	9.14	16.3	47	51.4223	17.8337	34.6809	11.6	1.624	9.396	0.580	0.000
30 PPM	E1R3803	6.52	13.3	38	58.2822	20.3988	35.0008	5.3	0.477	4.717	0.106	0.000
30 PPM	E1R3807	8.63	15.5	45	52.1437	17.9606	34.4444	6.2	1.550	4.464	0.186	0.000
10 PPM	F1R3811	9.26	16.5	50	53.9957	17.8186	33.0000	8.2	1.394	6.396	0.082	0.328
10 PPM	F1R3815	10.80	20.6	61	56.4815	19.0741	33.7705	16.6	11.620	4.482	0.498	0.000
10 PPM	F1R3817	6.53	13.3	38	58.1930	20.3675	35.0000	9.6	1.824	7.392	0.384	0.000
10 PPM	F1R3822	8.46	16.6	49	57.9196	19.6217	33.8776	9.1	1.638	7.189	0.000	0.273
10 PPM	F1R3826	8.64	16.5	49	56.7130	19.0972	33.6735	5.7	0.912	4.674	0.057	0.057
10 PPM	F1R3829	7.48	13.9	39	52.1390	18.5829	35.6410	6.2	1.674	4.154	0.186	0.186
10 PPM	F1R3832	8.51	16.8	49	57.5793	19.7415	34.2857	7.3	1.095	6.132	0.000	0.073
10 PPM	F1R3837	8.92	17.0	47	52.6906	19.0583	36.1702	7.5	1.200	6.150	0.000	0.150
10 PPM	F1R3841	7.85	14.0	38	48.4076	17.8344	36.8421	17.6	6.688	10.384	0.176	0.352
10 PPM	F1R3845	7.65	14.3	40	52.2876	18.6928	35.7500	10.1	1.212	8.585	0.303	0.000
10 PPM	F1R3848	7.73	15.9	46	59.5084	20.5692	34.5652	6.0	2.220	3.600	0.180	0.000
10 PPM	F1R3851	8.56	15.7	46	53.7383	18.3411	34.1304	8.3	0.913	7.138	0.249	0.000
10 PPM	F1R3853	9.03	16.0	47	52.0487	17.7187	34.0426	15.3	8.721	6.273	0.000	0.306
10 PPM	F1R3856	7.87	15.3	44	55.9085	19.4409	34.7727	7.0	2.240	4.270	0.490	0.000
10 PPM	F1R3858	8.08	15.7	52	64.3564	19.4307	30.1923	8.5	1.105	7.310	0.000	0.085

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN HEMOGRAM VALUES

FEMALE	N	ERYTHROCYTES (CELLS X 10**6) MEAN	S.DEV.	HEMOGLOBIN (G/DL) MEAN	S.DEV.	HEMATOCRIT (% PACKED CELLS) MEAN	S.DEV.	MCV (MICRONS**3) MEAN	S.DEV.	MCH (PICOGRAMS) MEAN	S.DEV.	MCHC (%) MEAN	S.DEV.
MONTH 3													
0 PPM	15	6.91	0.319	15.8	0.48	43.7	1.11	63	2.2	22.9	0.75	36.2	0.44
100 PPM	15	6.81	0.334	15.1*	0.62	41.6*	1.72	61	2.5	22.2	1.00	36.3	0.86
30 PPM	14	7.70*	0.518	15.7	0.46	42.9	1.46	56*	3.6	20.4*	1.28	36.6	0.59
10 PPM	15	7.65*	0.631	15.9	0.68	43.3	1.39	55*	4.3	20.3*	1.60	36.7	0.65
MONTH 6													
0 PPM	15	7.32	0.413	15.0	0.55	42.3	1.84	58	2.2	20.5	0.95	35.4	1.01
100 PPM	15	6.85*	0.252	14.0*	0.53	41.0	1.41	60	2.5	20.5	0.95	34.2*	1.34
30 PPM	15	8.02*	0.664	15.0	0.48	42.2	1.42	53*	3.5	18.7*	1.29	35.4	0.49
10 PPM	15	7.73	0.551	15.1	0.64	42.6	1.88	55	4.2	19.6	1.46	35.3	0.62
MONTH 12													
0 PPM	15	7.60	0.300	15.6	0.40	44.3	1.39	58	2.1	20.6	0.71	35.3	0.48
100 PPM	15	7.17*	0.449	14.2*	0.77	42.5	2.29	59	1.5	19.8*	0.62	33.4*	1.08
30 PPM	14	7.51	0.442	15.1	0.69	44.2	2.36	59	1.6	20.1	0.64	34.2*	0.64
10 PPM	15	7.38	0.322	15.3	0.57	43.2	1.74	59	1.7	20.8	0.61	35.5	0.56
MONTH 18													
0 PPM	15	7.37	0.668	15.4	1.43	42.9	4.13	58	1.7	21.0	0.68	36.0	0.85
100 PPM	15	6.55*	1.055	13.9*	1.84	40.2	5.72	62*	2.7	21.3	1.20	34.5*	0.89
30 PPM	15	7.29	0.522	14.7	1.16	43.7	3.33	60	2.4	20.2*	0.88	33.6*	1.02
10 PPM	15	7.64	0.429	15.5	0.63	46.1	2.03	60*	2.1	20.3	0.72	33.6*	0.81
MONTH 24													
0 PPM	15	7.06	1.129	14.8	1.80	42.3	5.40	60	3.5	21.2	1.45	35.1	0.87
100 PPM	15	6.10	1.227	12.3*	1.94	37.2	6.56	61	3.0	20.3	1.70	33.1#	1.42
30 PPM	15	6.41	1.752	13.4	3.04	39.5	9.17	64	8.2	22.0	4.41	34.4#	2.04
10 PPM	15	6.95	0.736	14.7	1.37	42.0	3.42	61	2.4	21.2	0.90	35.0	1.19

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN LEUKOCYTE VALUES

FEMALE	N	LEUKOCYTES (CELLS X 10**3) MEAN	S.DEV.	NEUTROPHILS (CELLS X 10**3) MEAN	S.DEV.	LYMPHOCYTES (CELLS X 10**3) MEAN	S.DEV.	MONOCYTES (CELLS X 10**3) MEAN	S.DEV.	EOSINOPHILS (CELLS X 10**3) MEAN	S.DEV.
MONTH 3											
0 PPM	15	18.98	2.698	2.57	1.406	15.73	2.970	0.37	0.217	0.31	0.262
100 PPM	15	16.74	4.405	2.12	1.357	14.25	3.683	0.17#	0.120	0.19	0.186
30 PPM	14	12.93*	3.604	1.77	1.094	10.88*	3.393	0.14#	0.097	0.13	0.199
10 PPM	15	15.56	4.815	2.23	0.942	12.70	4.782	0.36	0.273	0.27	0.268
MONTH 6											
0 PPM	15	7.52	2.559	1.44	1.586	5.87	2.160	0.13	0.096	0.08	0.067
100 PPM	15	8.34	1.820	1.43	0.572	6.41	1.508	0.32*	0.177	0.20*	0.125
30 PPM	15	8.67	2.615	1.16	0.632	7.14	2.397	0.26	0.152	0.11	0.090
10 PPM	15	8.04	1.492	1.33	0.580	6.26	1.258	0.36*	0.173	0.09	0.091
MONTH 12											
0 PPM	15	5.73	2.120	1.27	1.562	4.13	1.049	0.21	0.108	0.12	0.125
100 PPM	15	5.73	1.532	0.84	0.597	4.43	1.419	0.33	0.163	0.13	0.111
30 PPM	14	5.49	1.072	1.15	0.576	4.00	0.965	0.24	0.138	0.10	0.095
10 PPM	15	5.43	1.176	0.89	0.310	4.25	1.110	0.22	0.126	0.08	0.073
MONTH 18											
0 PPM	15	5.75	2.230	1.01	1.631	4.48	0.973	0.23	0.249	0.03	0.057
100 PPM	15	5.89	1.904	1.65#	1.038	3.73	0.932	0.40	0.198	0.10	0.106
30 PPM	15	6.23	2.568	2.34#	2.271	3.48*	0.742	0.28	0.134	0.13*	0.140
10 PPM	15	6.15	1.836	1.68#	0.774	3.90	1.160	0.43*	0.267	0.08	0.074
MONTH 24											
0 PPM	15	6.73	4.064	2.87	2.959	3.67	1.329	0.11	0.151	0.07	0.074
100 PPM	15	7.25	2.997	2.56	2.656	4.41	1.647	0.19	0.148	0.09	0.101
30 PPM	15	10.17	6.661	5.87	5.651	3.88	1.767	0.36#	0.485	0.06	0.061
10 PPM	15	6.78	3.315	2.00	1.804	4.55	1.935	0.17	0.171	0.08	0.144

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=3

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	N1R4576	6.98	15.6	43	61.6046	22.3496	36.2791	17.5	1.925	14.525	0.700	0.350
0 PPM	N1R4578	7.72	16.1	44	56.9948	20.8549	36.5909	20.1	3.417	16.080	0.402	0.201
0 PPM	N1R4582	6.79	15.7	43	63.3284	23.1222	36.5116	17.0	2.040	14.280	0.510	0.170
0 PPM	N1R4583	6.74	15.6	43	63.7982	23.1454	36.2791	19.4	2.134	17.072	0.000	0.194
0 PPM	N1R4584	6.31	14.9	42	66.5610	23.6133	35.4762	20.5	4.715	14.555	0.410	0.820
0 PPM	N1R4592	7.03	16.2	45	64.0114	23.0441	36.0000	17.3	5.882	11.072	0.173	0.173
0 PPM	N1R4610	6.94	15.6	44	63.4006	22.4784	35.4545	15.4	2.156	12.782	0.154	0.308
0 PPM	N1R4612	6.88	15.7	44	63.9535	22.8198	35.6818	21.0	2.310	18.480	0.210	0.000
0 PPM	N1R4613	6.73	15.0	42	62.4071	22.2883	35.7143	16.1	2.898	12.397	0.322	0.483
0 PPM	N1R4619	7.35	16.5	45	61.2245	22.4490	36.6667	21.0	0.630	19.320	0.420	0.630
0 PPM	N1R4621	6.60	15.5	42	63.6364	23.4848	36.9048	24.3	1.944	21.384	0.243	0.729
0 PPM	N1R4626	6.98	16.0	44	63.0372	22.9226	36.3636	21.1	4.009	16.458	0.211	0.422
0 PPM	N1R4627	6.84	16.4	45	65.7895	23.9766	36.4444	19.6	1.176	18.032	0.392	0.000
0 PPM	N1R4633	6.84	16.0	44	64.3275	23.3918	36.3636	20.4	2.040	17.544	0.816	0.000
0 PPM	N1R4640	6.99	16.4	45	64.3777	23.4621	36.4444	14.0	1.260	12.040	0.560	0.140
100 PPM	Q1R4757	6.99	15.3	40	57.2246	21.8884	38.2500	15.1	0.151	14.798	0.000	0.151
100 PPM	Q1R4764	7.05	15.1	42	59.5745	21.4184	35.9524	15.5	2.015	13.175	0.155	0.155
100 PPM	Q1R4766	6.74	13.9	40	59.3472	20.6231	34.7500	22.5	3.825	18.000	0.225	0.450
100 PPM	Q1R4772	6.68	15.5	43	64.3713	23.2036	36.0465	26.7	2.403	23.763	0.267	0.267
100 PPM	Q1R4783	6.64	14.4	40	60.2410	21.6867	36.0000	12.9	3.354	8.901	0.129	0.516
100 PPM	Q1R4785	6.44	14.9	40	62.1118	23.1366	37.2500	12.7	1.016	11.430	0.127	0.127
100 PPM	Q1R4790	7.40	15.8	44	59.4595	21.3514	35.9091	12.4	0.868	11.160	0.248	0.124
100 PPM	Q1R4791	6.91	15.7	44	63.6758	22.7207	35.6818	11.3	1.356	9.831	0.000	0.113
100 PPM	Q1R4792	6.51	15.5	42	64.5161	23.8095	36.9048	14.2	1.278	12.212	0.142	0.568
100 PPM	Q1R4793	7.22	15.4	42	58.1717	21.3296	36.6667	20.7	4.968	15.318	0.207	0.207
100 PPM	Q1R4808	6.65	15.1	41	61.6541	22.7068	36.8293	14.1	0.423	13.677	0.000	0.000
100 PPM	Q1R4812	6.67	15.8	43	64.4678	23.6882	36.7442	20.0	3.000	16.800	0.200	0.000
100 PPM	Q1R4814	6.14	14.0	39	63.5179	22.8013	35.8974	19.0	2.850	15.770	0.380	0.000
100 PPM	Q1R4816	6.85	14.6	40	58.3942	21.3139	36.5000	19.3	2.895	15.826	0.386	0.193
100 PPM	Q1R4819	7.23	15.5	44	60.8575	21.4385	35.2273	14.7	1.470	13.083	0.147	0.000

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=3

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	R1R4822	7.20	15.3	42	58.3333	21.2500	36.4286	8.32	1.8304	6.4064	0.0832	0.0000
30 PPM	R1R4823	7.31	15.0	41	56.0876	20.5198	36.5854	16.90	2.8730	13.0130	0.1690	0.6760
30 PPM	R1R4830	8.42	16.6	45	53.4442	19.7150	36.8889	11.80	0.9440	10.6200	0.2360	0.0000
30 PPM	R1R4833	7.83	15.9	45	57.4713	20.3065	35.3333	13.30	1.5960	11.5710	0.1330	0.0000
30 PPM	R1R4836	7.33	16.0	44	60.0273	21.8281	36.3636	17.50	3.3250	14.0000	0.1750	0.0000
30 PPM	R1R4837	7.35	15.4	41	55.7823	20.9524	37.5610	8.52	0.7668	7.4976	0.0000	0.2556
30 PPM	R1R4842	8.12	16.3	44	54.1872	20.0739	37.0455	14.80	1.1840	13.4680	0.1480	0.0000
30 PPM	R1R4848	7.53	15.7	42	55.7769	20.8499	37.3810	11.10	1.6650	9.1020	0.3330	0.1110
30 PPM	R1R4850	7.91	15.3	42	53.0973	19.3426	36.4286	9.21	0.9210	8.2890	0.0000	0.0000
30 PPM	R1R4853	7.53	16.0	44	58.4329	21.2483	36.3636	11.30	2.8250	8.4750	0.0000	0.0000
30 PPM	R1R4854	8.99	15.0	41	45.6062	16.6852	36.5854	20.80	1.0400	19.1360	0.2080	0.4160
30 PPM	R1R4856	.	.	.	.	.	.	.	.	.	.	.
30 PPM	R1R4860	7.35	15.4	43	58.5034	20.9524	35.8140	11.00	0.9900	9.6800	0.2200	0.1100
30 PPM	R1R4864	7.23	15.6	42	58.0913	21.5768	37.1429	13.90	0.6950	12.9270	0.1390	0.1390
30 PPM	R1R4865	7.65	16.0	44	57.5163	20.9150	36.3636	12.60	4.1580	8.1900	0.1260	0.1260
10 PPM	S1R4871	7.24	15.1	42	58.0110	20.8564	35.9524	11.90	2.2610	9.1630	0.3570	0.1190
10 PPM	S1R4875	7.87	16.2	44	55.9085	20.5845	36.8182	14.30	1.2870	12.4410	0.4290	0.1430
10 PPM	S1R4879	7.60	15.4	43	56.5789	20.2632	35.8140	18.40	3.8640	14.1680	0.1840	0.1840
10 PPM	S1R4880	7.52	15.3	42	55.8511	20.3457	36.4286	24.40	1.4640	22.4480	0.4880	0.0000
10 PPM	S1R4881	8.29	16.0	44	53.0760	19.3004	36.3636	14.20	1.9880	11.6440	0.2840	0.2840
10 PPM	S1R4884	7.68	15.7	43	55.9896	20.4427	36.5116	17.50	1.7500	15.0500	0.3500	0.3500
10 PPM	S1R4885	7.71	15.0	42	54.4747	19.4553	35.7143	15.40	2.1560	12.9360	0.1540	0.1540
10 PPM	S1R4886	9.96	15.2	41	41.1647	15.2610	37.0732	14.10	1.2690	12.4080	0.2820	0.1410
10 PPM	S1R4889	7.65	15.8	42	54.9020	20.6536	37.6190	11.90	4.1650	7.4970	0.0000	0.2380
10 PPM	S1R4896	7.87	16.6	45	57.1792	21.0928	36.8889	16.00	2.2400	12.3200	1.1200	0.3200
10 PPM	S1R4897	7.49	16.5	45	60.0801	22.0294	36.6667	10.00	2.3000	7.3000	0.1000	0.3000
10 PPM	S1R4901	7.88	16.4	44	55.8376	20.8122	37.2727	12.20	2.4400	8.9060	0.4880	0.3660
10 PPM	S1R4902	7.87	17.5	46	58.4498	22.2363	38.0435	8.47	1.0164	7.2842	0.0847	0.0847
10 PPM	S1R4905	7.60	15.6	43	56.5789	20.5263	36.2791	25.30	1.7710	22.7700	0.5060	0.2530
10 PPM	S1R4915	7.53	15.9	43	57.1049	21.1155	36.9767	19.40	3.4920	14.1620	0.5820	1.1640

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=6

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	N1R4582	7.32	15.0	43	58.7432	20.4918	34.8837	8.59	0.6872	7.5592	0.2577	0.0859
0 PPM	N1R4584	7.85	15.8	46	58.5987	20.1274	34.3478	6.45	0.5160	5.8695	0.0000	0.0645
0 PPM	N1R4586	6.81	13.8	39	57.2687	20.2643	35.3846	6.24	1.9344	4.0560	0.0624	0.1872
0 PPM	N1R4590	7.19	15.3	43	59.8053	21.2796	35.5814	7.95	1.1925	6.5190	0.2385	0.0000
0 PPM	N1R4598	7.31	15.1	42	57.4555	20.6566	35.9524	7.43	0.9659	6.3155	0.0000	0.1486
0 PPM	N1R4603	6.60	14.7	40	60.6061	22.2727	36.7500	7.69	0.4614	7.0748	0.0769	0.0769
0 PPM	N1R4607	7.88	15.8	44	55.8376	20.0508	35.9091	6.43	0.5787	5.7227	0.1286	0.0000
0 PPM	N1R4616	8.03	14.6	44	54.7945	18.1818	33.1818	6.95	0.4170	6.3940	0.1390	0.0000
0 PPM	N1R4619	7.70	15.3	44	57.1429	19.8701	34.7727	5.98	0.5382	5.3222	0.0598	0.0598
0 PPM	N1R4621	6.80	14.3	42	61.7647	21.0294	34.0476	6.61	1.2559	5.2219	0.0661	0.0661
0 PPM	N1R4622	7.23	14.4	41	56.7082	19.9170	35.1220	4.59	0.4131	4.0392	0.0918	0.0459
0 PPM	N1R4629	7.32	15.1	42	57.3770	20.6284	35.9524	14.90	4.7680	9.8340	0.1490	0.1490
0 PPM	N1R4631	7.36	14.8	40	54.3478	20.1087	37.0000	11.00	1.2100	9.2400	0.3300	0.2200
0 PPM	N1R4632	7.28	15.1	42	57.6923	20.7418	35.9524	4.76	1.0948	3.5224	0.0952	0.0476
0 PPM	N1R4639	7.05	15.4	43	60.9929	21.8440	35.8140	7.28	5.6056	1.3832	0.2184	0.0728
100 PPM	Q1R4759	6.51	13.4	38	58.3717	20.5837	35.2632	8.60	1.4620	6.6800	0.1720	0.0860
100 PPM	Q1R4760	6.71	13.2	42	62.5931	19.6721	31.4286	7.57	1.8168	5.4504	0.1514	0.1514
100 PPM	Q1R4764	6.87	14.9	40	58.2242	21.6885	37.2500	4.64	0.5104	3.9904	0.0464	0.0928
100 PPM	Q1R4771	6.80	13.6	39	57.3529	20.0000	34.8718	10.30	1.2360	8.5490	0.4120	0.1030
100 PPM	Q1R4773	6.33	14.3	41	64.7709	22.5908	34.8780	9.96	1.4940	7.8684	0.3984	0.1992
100 PPM	Q1R4774	6.94	13.7	42	60.5187	19.7406	32.6190	8.26	0.9912	7.1036	0.0826	0.0826
100 PPM	Q1R4776	6.71	13.8	40	59.6125	20.5663	34.5000	6.71	0.9394	5.3009	0.1342	0.3355
100 PPM	Q1R4785	6.55	14.1	42	64.1221	21.5267	33.5714	7.45	1.7135	5.1405	0.3725	0.2235
100 PPM	Q1R4786	7.22	13.9	41	56.7867	19.2521	33.9024	8.64	0.8640	7.0848	0.3456	0.3456
100 PPM	Q1R4794	7.03	14.3	43	61.1664	20.3414	33.2558	9.08	1.5436	6.9916	0.4540	0.0908
100 PPM	Q1R4798	6.91	14.1	41	59.3343	20.4052	34.3902	7.17	1.5057	4.9473	0.2868	0.4302
100 PPM	Q1R4803	7.14	13.7	41	57.4230	19.1877	33.4146	8.53	2.3884	5.1180	0.6824	0.3412
100 PPM	Q1R4808	6.87	13.8	40	58.2242	20.0873	34.5000	7.32	0.9516	5.7096	0.4392	0.2196
100 PPM	Q1R4812	7.14	14.8	42	58.8235	20.7283	35.2381	12.70	2.6670	9.5250	0.5080	0.0000
100 PPM	Q1R4814	7.00	14.9	43	61.4286	21.2857	34.6512	8.20	1.3120	6.4780	0.2460	0.2460

C01550

TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=6

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	R1R4822	7.320	14.9	42	57.3770	20.3552	35.4762	5.96	0.9536	4.7680	0.1788	0.0596
30 PPM	R1R4826	7.490	15.5	43	57.4099	20.6943	36.0465	11.50	2.3000	8.5100	0.5750	0.1150
30 PPM	R1R4829	7.790	14.6	42	53.9153	18.7420	34.7619	11.90	0.9520	10.7100	0.1190	0.1190
30 PPM	R1R4832	7.710	14.8	42	54.4747	19.1958	35.2381	11.60	0.8120	10.4400	0.1160	0.2320
30 PPM	R1R4835	7.430	15.0	42	56.5276	20.1884	35.7143	8.54	0.3416	7.7714	0.4270	0.0000
30 PPM	R1R4838	8.730	15.1	42	48.1100	17.2967	35.9524	11.10	1.4430	8.9910	0.4440	0.2220
30 PPM	R1R4850	7.560	14.7	41	54.2328	19.4444	35.8537	5.47	0.3282	4.9230	0.1641	0.0547
30 PPM	R1R4853	9.270	15.5	44	47.4649	16.7206	35.2273	6.27	0.7524	5.2668	0.1881	0.0627
30 PPM	R1R4854	7.900	14.8	43	54.4304	18.7342	34.4186	13.10	1.5720	11.1350	0.1310	0.2620
30 PPM	R1R4856	8.030	15.4	43	53.5492	19.1781	35.8140	6.69	2.2746	3.8133	0.3345	0.2676
30 PPM	R1R4858	7.520	14.6	41	54.5213	19.4149	35.6098	5.61	0.3927	5.0490	0.1122	0.0561
30 PPM	R1R4860	7.360	13.8	39	52.9891	18.7500	35.3846	7.67	1.6107	5.9059	0.0767	0.0767
30 PPM	R1R4867	9.190	15.6	45	48.9663	16.9750	34.6667	6.91	0.8292	5.7353	0.2764	0.0691
30 PPM	R1R4868	8.750	14.6	41	46.8571	16.6857	35.6098	9.97	1.3958	8.0757	0.3988	0.0997
30 PPM	R1R4870	8.190	15.4	43	52.5031	18.8034	35.8140	7.81	1.4839	6.0137	0.3124	0.0000
10 PPM	S1R4873	7.640	14.0	41	53.6649	18.3246	34.1463	9.00	1.0800	7.4700	0.4500	0.0000
10 PPM	S1R4876	7.760	14.9	43	55.4124	19.2010	34.6512	6.85	0.6850	5.8225	0.3425	0.0000
10 PPM	S1R4877	7.640	14.3	40	52.3560	18.7173	35.7500	9.50	1.7100	7.6000	0.1900	0.0000
10 PPM	S1R4878	7.640	15.6	43	56.2827	20.4188	36.2791	9.13	1.3695	7.5779	0.0913	0.0913
10 PPM	S1R4881	8.240	15.7	45	54.6117	19.0534	34.8889	8.38	1.4246	6.3688	0.5028	0.0838
10 PPM	S1R4887	9.230	15.7	44	47.6706	17.0098	35.6818	6.91	1.3820	4.9061	0.4146	0.2073
10 PPM	S1R4890	7.510	15.1	42	55.9254	20.1065	35.9524	8.26	1.1564	6.4428	0.6608	0.0000
10 PPM	S1R4891	7.440	15.3	43	57.7957	20.5645	35.5814	7.41	0.5928	6.7431	0.0741	0.0000
10 PPM	S1R4898	8.241	14.0	39	47.3244	16.9882	35.8974	8.52	1.9596	6.0492	0.3408	0.1704
10 PPM	S1R4901	7.120	15.7	45	63.2022	22.0506	34.8889	4.88	0.9760	3.5624	0.1952	0.1464
10 PPM	S1R4907	7.260	14.3	41	56.4738	19.6970	34.8780	8.11	0.8921	6.6502	0.4866	0.0911
10 PPM	S1R4912	7.190	14.8	41	57.0236	20.5841	36.0976	6.65	1.7290	4.3890	0.3990	0.1330
10 PPM	S1R4913	7.580	15.8	45	59.3668	20.8443	35.1111	10.70	2.8890	7.2760	0.5350	0.0000
10 PPM	S1R4915	8.150	15.3	44	53.9877	18.7730	34.7727	9.63	1.1556	7.7040	0.4815	0.2889
10 PPM	S1R4918	7.240	15.3	43	59.3923	21.1326	35.5814	6.65	0.9310	5.3865	0.1995	0.1330

C01551

TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=12

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	N1R4578	7.55	15.7	44	58.2781	20.7947	35.6818	3.5	0.840	2.450	0.140	0.070
0 PPM	N1R4582	7.57	15.7	44	58.1242	20.7398	35.6818	6.9	0.621	5.865	0.207	0.207
0 PPM	N1R4585	7.84	15.9	45	57.3980	20.2806	35.3333	4.1	0.451	3.280	0.287	0.082
0 PPM	N1R4588	7.23	15.2	43	59.4744	21.0235	35.3488	3.9	0.390	3.276	0.156	0.078
0 PPM	N1R4589	7.94	15.1	43	54.1562	19.0176	35.1163	6.8	3.264	3.468	0.068	0.000
0 PPM	N1R4590	7.44	15.8	44	59.1398	21.2366	35.9091	5.4	0.648	4.482	0.162	0.108
0 PPM	N1R4601	7.17	15.2	43	59.9721	21.1994	35.3488	4.6	0.598	3.542	0.276	0.184
0 PPM	N1R4608	8.26	16.3	46	55.6901	19.7337	35.4348	7.1	0.710	5.822	0.355	0.213
0 PPM	N1R4610	7.32	15.1	42	57.3770	20.6284	35.9524	3.8	0.152	3.534	0.038	0.076
0 PPM	N1R4620	7.80	15.3	43	55.1282	19.6154	35.5814	5.2	0.156	4.888	0.156	0.000
0 PPM	N1R4629	7.84	16.0	47	59.9490	20.4082	34.0426	12.1	6.171	5.324	0.121	0.484
0 PPM	N1R4630	7.44	15.6	44	59.1398	20.9677	35.4545	6.5	1.365	4.810	0.325	0.000
0 PPM	N1R4631	7.68	15.8	45	58.5938	20.5729	35.1111	5.9	1.239	4.189	0.413	0.059
0 PPM	N1R4632	7.55	16.3	46	60.9272	21.5894	35.4348	4.9	1.666	2.691	0.294	0.049
0 PPM	N1R4640	7.30	15.6	45	61.6438	21.3699	34.6667	5.2	0.728	4.056	0.208	0.208
100 PPM	Q1R4757	7.40	14.7	44	59.4595	19.8649	33.4091	5.0	0.500	4.200	0.250	0.100
100 PPM	Q1R4760	7.26	14.5	43	59.2287	19.9725	33.7209	6.0	0.840	4.740	0.180	0.240
100 PPM	Q1R4761	7.11	13.8	42	59.0717	19.4093	32.8971	5.4	1.566	3.132	0.486	0.216
100 PPM	Q1R4763	6.77	13.7	41	60.5613	20.2363	33.4146	5.0	1.150	3.650	0.200	0.000
100 PPM	Q1R4775	6.58	13.9	41	62.3100	21.1246	33.9024	5.2	0.416	4.420	0.364	0.000
100 PPM	Q1R4779	7.53	15.1	44	58.4329	20.0531	34.3182	5.8	2.262	3.016	0.464	0.058
100 PPM	Q1R4780	7.78	14.4	44	56.5553	18.5090	32.7273	8.9	1.513	6.764	0.534	0.089
100 PPM	Q1R4782	7.29	14.0	45	61.7284	19.2044	31.1111	5.0	0.700	4.200	0.100	0.000
100 PPM	Q1R4783	6.76	13.2	41	60.6509	19.5266	32.1951	3.4	0.238	2.958	0.170	0.034
100 PPM	Q1R4785	7.21	14.5	42	58.2524	20.1110	34.5238	4.6	0.874	3.220	0.322	0.184
100 PPM	Q1R4787	7.33	14.2	44	60.0273	19.3724	32.2727	6.4	1.024	4.544	0.576	0.256
100 PPM	Q1R4788	7.41	15.1	44	59.3792	20.3779	34.3182	5.6	0.168	5.040	0.224	0.168
100 PPM	Q1R4793	7.86	15.6	45	57.2519	19.8473	34.6667	4.5	0.045	4.185	0.270	0.000
100 PPM	Q1R4806	7.08	13.8	42	59.3220	19.4915	32.8971	9.2	0.552	8.188	0.184	0.276
100 PPM	Q1R4816	6.17	12.6	36	58.3468	20.4214	35.0000	5.9	0.767	4.248	0.590	0.295

C01552

TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=18

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	N1R4581	6.16	12.3	34	55.1948	19.9675	36.1766	13.2	6.600	5.544	1.056	0.000
0 PPM	N1R4583	7.52	15.6	44	58.5106	20.7447	35.4545	5.2	0.208	4.836	0.156	0.000
0 PPM	N1R4586	7.08	14.5	41	57.9098	20.4802	35.3659	4.7	0.517	3.854	0.188	0.141
0 PPM	N1R4592	8.04	16.8	46	57.2139	20.8955	36.5217	6.5	1.690	4.680	0.130	0.000
0 PPM	N1R4595	7.52	15.3	44	58.5106	20.3457	34.7727	4.3	1.075	2.967	0.129	0.129
0 PPM	N1R4598	7.44	16.4	45	60.4839	22.0430	36.4444	5.0	0.200	4.650	0.150	0.000
0 PPM	N1R4599	7.80	16.1	44	56.4103	20.6410	36.5909	4.8	0.384	4.128	0.144	0.144
0 PPM	N1R4602	7.72	16.6	45	58.2902	21.5026	36.8889	6.5	0.195	6.305	0.065	0.000
0 PPM	N1R4604	7.97	16.4	47	58.9711	20.5772	34.8936	4.9	0.441	4.410	0.049	0.000
0 PPM	N1R4606	5.85	12.4	34	58.1197	21.1966	36.4706	5.1	1.632	3.060	0.408	0.000
0 PPM	N1R4609	7.07	15.5	41	57.9915	21.9236	37.8049	4.9	0.931	3.675	0.294	0.000
0 PPM	N1R4611	6.95	14.7	41	58.9928	21.1511	35.8537	5.3	0.371	4.664	0.265	0.000
0 PPM	N1R4612	8.27	16.5	47	56.8319	19.9516	35.1064	7.0	0.840	5.950	0.210	0.000
0 PPM	N1R4627	7.36	16.2	46	62.5000	22.0109	35.2174	5.0	0.050	4.900	0.050	0.000
0 PPM	N1R4638	7.76	16.4	45	57.9897	21.1340	36.4444	3.8	0.076	3.610	0.114	0.000
100 PPM	Q1R4762	6.81	14.4	41	60.2056	21.1454	35.1220	9.0	2.070	6.030	0.720	0.180
100 PPM	Q1R4765	7.54	14.7	43	57.0292	19.4960	34.1860	3.5	0.735	2.590	0.140	0.035
100 PPM	Q1R4772	7.11	14.7	43	60.4782	20.6751	34.1860	5.0	1.050	3.700	0.200	0.050
100 PPM	Q1R4776	7.07	15.1	42	59.4059	21.3579	35.9524	4.5	0.945	3.150	0.405	0.000
100 PPM	Q1R4778	7.10	14.7	43	60.5634	20.7042	34.1860	5.4	1.404	3.726	0.270	0.000
100 PPM	Q1R4789	6.81	14.5	43	63.1424	21.2922	33.7209	5.8	1.392	3.944	0.406	0.058
100 PPM	Q1R4794	6.73	14.4	42	62.4071	21.3967	34.2857	6.1	1.281	4.453	0.305	0.061
100 PPM	Q1R4801	6.89	14.0	40	58.0552	20.3193	35.0000	2.8	0.504	2.072	0.196	0.028
100 PPM	Q1R4803	6.94	14.3	42	60.5187	20.6052	34.0476	5.7	1.596	3.363	0.342	0.399
100 PPM	Q1R4807	3.15	7.6	21	66.6667	24.1270	36.1905	10.1	4.949	4.141	0.808	0.202
100 PPM	Q1R4808	6.76	14.1	42	62.1302	20.8580	33.5714	5.0	1.550	3.000	0.300	0.150
100 PPM	Q1R4811	6.11	13.8	40	65.4664	22.5859	34.5000	5.2	1.404	3.328	0.468	0.000
100 PPM	Q1R4813	6.87	15.1	44	64.0466	21.9796	34.3182	5.9	1.711	3.717	0.354	0.118
100 PPM	Q1R4814	5.44	12.5	35	64.3382	22.9779	35.7143	6.6	1.716	4.422	0.396	0.066
100 PPM	Q1R4817	6.94	13.9	42	60.5187	20.0288	33.0952	7.7	2.464	4.389	0.693	0.154

C01553

TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=18

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	R1R4824	6.87	13.8	43	62.5910	20.0873	32.0930	5.0	1.800	3.050	0.100	0.050
30 PPM	R1R4825	7.47	14.9	45	60.2410	19.9465	33.1111	5.6	1.512	3.584	0.336	0.168
30 PPM	R1R4832	7.32	14.3	42	57.3770	19.5355	34.0476	5.4	1.836	3.078	0.378	0.108
30 PPM	R1R4836	7.44	14.9	44	59.1398	20.0269	33.8636	5.4	1.944	2.916	0.324	0.216
30 PPM	R1R4839	7.65	15.8	46	60.1307	20.6536	34.3478	3.1	0.992	1.736	0.310	0.062
30 PPM	R1R4844	7.03	15.4	46	65.4339	21.9061	33.4783	6.3	0.945	4.977	0.315	0.063
30 PPM	R1R4845	7.09	14.3	42	59.2384	20.1693	34.0476	5.3	1.537	3.657	0.053	0.053
30 PPM	R1R4846	5.95	11.7	35	58.8235	19.6639	33.4286	7.4	3.404	3.700	0.148	0.148
30 PPM	R1R4847	7.95	17.0	49	61.6352	21.3836	34.6939	6.6	2.574	3.564	0.330	0.132
30 PPM	R1R4849	7.68	14.5	47	61.1979	18.8802	30.8511	5.9	1.475	4.130	0.236	0.059
30 PPM	R1R4855	7.44	15.1	45	60.4839	20.2957	33.5556	7.0	2.380	4.200	0.420	0.000
30 PPM	R1R4861	7.27	13.9	41	56.3961	19.1197	33.9024	14.8	10.212	3.404	0.592	0.592
30 PPM	R1R4862	6.87	14.3	41	59.6798	20.8151	34.8780	5.4	1.296	3.780	0.270	0.054
30 PPM	R1R4863	7.16	15.1	44	61.4525	21.0894	34.3182	4.4	1.232	2.728	0.264	0.176
30 PPM	R1R4864	8.15	15.5	46	56.4417	19.0184	33.6957	5.9	1.888	3.717	0.177	0.118
10 PPM	S1R4872	7.33	14.7	44	60.0273	20.0546	33.4091	7.6	1.368	5.700	0.456	0.076
10 PPM	S1R4873	7.34	15.1	45	61.3079	20.5722	33.5556	7.0	2.730	3.150	0.420	0.000
10 PPM	S1R4876	7.86	16.1	48	61.0687	20.4835	33.5417	3.7	0.740	2.553	0.370	0.037
10 PPM	S1R4878	7.93	15.5	46	58.0076	19.5460	33.6957	6.2	1.240	4.650	0.186	0.124
10 PPM	S1R4881	7.62	15.4	44	57.7428	20.2100	35.0000	6.0	1.260	4.260	0.240	0.240
10 PPM	S1R4892	7.60	15.1	46	60.5263	19.8684	32.8261	10.6	3.286	6.360	0.954	0.000
10 PPM	S1R4893	7.38	16.1	47	63.6856	21.8157	34.2593	6.1	1.830	3.904	0.305	0.061
10 PPM	S1R4903	7.71	15.6	47	60.9598	20.2335	33.1915	3.5	0.560	2.660	0.280	0.000
10 PPM	S1R4904	8.59	16.2	49	57.0431	18.8591	33.0612	5.2	1.664	3.120	0.416	0.000
10 PPM	S1R4907	8.03	15.6	46	57.2852	19.4271	33.9130	5.7	0.855	4.617	0.114	0.114
10 PPM	S1R4909	7.77	16.0	48	61.7761	20.5920	33.3333	6.4	1.984	3.776	0.448	0.192
10 PPM	S1R4910	7.37	14.8	47	63.7720	20.0814	31.4894	3.3	1.155	1.980	0.099	0.066
10 PPM	S1R4915	7.22	15.1	44	60.9418	20.9141	34.3182	7.2	2.592	3.672	0.792	0.144
10 PPM	S1R4916	6.82	14.4	42	61.5836	21.1144	34.2857	7.1	2.059	3.976	0.923	0.142
10 PPM	S1R4919	8.08	16.6	49	60.6436	20.5446	33.8776	6.6	1.914	4.158	0.462	0.066

TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=24

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
0 PPM	N1R4583	7.48	15.3	42	56.1497	20.4545	36.4286	18.7	12.529	5.984	0.187	0.000
0 PPM	N1R4586	7.22	14.3	42	58.1717	19.8061	34.0476	4.1	1.148	2.952	0.000	0.000
0 PPM	N1R4591	7.91	15.7	45	56.8900	19.8483	34.8889	4.9	0.735	4.018	0.000	0.147
0 PPM	N1R4595	7.97	15.9	46	57.7164	19.9498	34.5652	4.6	2.714	1.702	0.092	0.138
0 PPM	N1R4598	7.43	16.4	47	63.2571	22.0727	34.8936	6.2	2.232	3.844	0.062	0.062
0 PPM	N1R4603	7.07	14.9	44	62.2348	21.0750	33.8636	4.2	1.092	3.066	0.000	0.042
0 PPM	N1R4606	7.78	15.9	46	59.1260	20.4370	34.5652	4.7	1.081	3.525	0.094	0.000
0 PPM	N1R4611	4.21	10.3	29	68.8836	24.4656	35.5172	9.2	3.496	5.428	0.184	0.092
0 PPM	N1R4614	7.34	16.0	44	59.9455	21.7984	36.3636	5.1	1.989	3.060	0.051	0.000
0 PPM	N1R4616	7.24	15.2	43	59.3923	20.9945	35.3488	4.5	2.115	2.340	0.000	0.045
0 PPM	N1R4626	7.31	14.5	42	57.4555	19.8358	34.5238	5.4	2.592	2.646	0.108	0.054
0 PPM	N1R4628	6.21	13.4	38	61.1916	21.5781	35.2632	8.6	3.870	4.386	0.086	0.258
0 PPM	N1R4634	4.86	11.7	32	65.8436	24.0741	36.5625	12.2	5.246	6.222	0.610	0.122
0 PPM	N1R4636	7.90	16.1	47	59.4937	20.3797	34.2553	5.0	1.650	3.250	0.100	0.000
0 PPM	N1R4638	7.99	16.8	47	58.8235	21.0263	35.7447	3.5	0.630	2.695	0.140	0.035
100 PPM	Q1R4759	6.30	12.7	39	61.9048	20.1587	32.5641	7.7	2.541	4.774	0.308	0.077
100 PPM	Q1R4764	5.87	11.7	35	59.6252	19.9319	33.4286	5.6	0.784	4.704	0.112	0.000
100 PPM	Q1R4767	4.68	10.3	30	64.1026	22.0085	34.3333	5.8	2.146	3.364	0.174	0.116
100 PPM	Q1R4769	5.32	11.3	33	62.0301	21.2406	34.2424	14.9	11.622	2.980	0.298	0.000
100 PPM	Q1R4773	6.49	12.4	38	58.5516	19.1063	32.6316	6.2	1.488	4.526	0.062	0.124
100 PPM	Q1R4778	7.82	15.4	47	60.1023	19.6931	32.7660	4.3	0.989	3.225	0.000	0.086
100 PPM	Q1R4794	7.04	14.5	45	63.9205	20.5966	32.2222	4.9	2.058	2.646	0.147	0.049
100 PPM	Q1R4796	7.62	13.9	43	56.4304	18.2415	32.3256	4.9	1.470	3.332	0.049	0.049
100 PPM	Q1R4800	3.62	8.9	25	69.0608	24.5856	35.6000	12.8	4.352	7.680	0.384	0.384
100 PPM	Q1R4803	6.97	13.7	42	60.2582	19.6557	32.6190	6.1	2.135	3.782	0.000	0.183
100 PPM	Q1R4809	5.49	10.4	32	58.2878	18.9435	32.5000	7.9	1.343	6.241	0.237	0.079
100 PPM	Q1R4811	5.61	11.9	35	62.3886	21.2121	34.0000	5.7	2.907	2.565	0.171	0.057
100 PPM	Q1R4814	6.25	11.2	38	60.8000	17.9200	29.4737	6.3	1.575	4.032	0.504	0.189
100 PPM	Q1R4817	4.75	10.4	30	63.1579	21.8947	34.6667	9.4	1.410	7.708	0.282	0.000
100 PPM	Q1R4819	7.74	15.1	46	59.4315	19.5090	32.8261	6.3	1.575	4.662	0.063	0.000

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TABLE 13

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL HEMOGRAM VALUES

MONTH=24

DOSE	ANIMAL	ERYTH	HEMO	HEMAT	MCV	MCH	MCHC	WBC	PMNAB	LYMAB	MONOAB	EOSAB
30 PPM	R1R4822	3.29	8.1	26	79.0274	24.6201	31.1538	15.5	11.625	3.100	0.620	0.155
30 PPM	R1R4826	6.39	13.5	39	61.0329	21.1268	34.6154	7.2	3.168	3.816	0.144	0.072
30 PPM	R1R4827	6.75	13.4	40	59.2593	19.8519	33.5000	8.5	1.445	6.885	0.170	0.000
30 PPM	R1R4832	7.38	13.9	43	58.2656	18.8347	32.3256	6.9	1.863	4.830	0.069	0.138
30 PPM	R1R4834	6.05	12.7	38	62.8099	20.9917	33.4211	3.9	1.482	2.379	0.039	0.000
30 PPM	R1R4836	7.07	14.6	42	59.4059	20.6506	34.7619	5.8	1.856	3.712	0.116	0.116
30 PPM	R1R4839	7.33	15.0	45	61.3915	20.4638	33.3333	3.9	0.897	2.808	0.156	0.039
30 PPM	R1R4844	6.80	15.2	44	64.7059	22.3529	34.5455	12.3	8.364	3.567	0.369	0.000
30 PPM	R1R4847	8.10	18.5	53	65.4321	22.8395	34.9057	17.4	15.486	1.392	0.522	0.000
30 PPM	R1R4851	1.52	5.6	13	85.5263	36.8421	43.0769	28.4	19.028	7.384	1.988	0.000
30 PPM	R1R4854	6.40	13.0	40	62.5000	20.3125	32.5000	10.1	5.454	4.040	0.505	0.101
30 PPM	R1R4858	6.87	14.6	42	61.1354	21.2518	34.7619	4.2	2.520	1.554	0.084	0.042
30 PPM	R1R4859	6.95	14.9	43	61.8705	21.4388	34.6512	5.5	2.860	2.475	0.110	0.055
30 PPM	R1R4864	8.11	15.0	44	54.2540	18.4957	34.0909	7.8	2.964	4.446	0.234	0.156
30 PPM	R1R4869	7.09	13.7	40	56.4175	19.3230	34.2500	15.1	9.060	5.738	0.302	0.000
10 PPM	S1R4872	6.53	13.2	38	58.1930	20.2144	34.7368	5.4	1.080	4.158	0.108	0.054
10 PPM	S1R4873	7.11	14.7	43	60.4782	20.6751	34.1860	3.9	0.897	2.808	0.156	0.039
10 PPM	S1R4876	6.96	14.6	42	60.3448	20.9770	34.7619	5.0	1.200	3.650	0.150	0.050
10 PPM	S1R4881	7.78	15.1	44	56.5553	19.4087	34.3182	4.9	0.833	3.969	0.098	0.000
10 PPM	S1R4882	6.68	14.8	41	61.3772	22.1557	36.0976	9.3	4.650	4.464	0.093	0.093
10 PPM	S1R4884	6.11	13.3	39	63.8298	21.7676	34.1026	12.1	6.897	4.719	0.484	0.000
10 PPM	S1R4885	7.64	16.1	45	58.9005	21.0733	35.7778	5.0	1.100	3.750	0.100	0.050
10 PPM	S1R4892	6.39	13.0	39	61.0329	20.3443	33.3333	14.1	2.820	10.575	0.564	0.141
10 PPM	S1R4894	7.73	17.0	45	58.2147	21.9922	37.7778	4.1	0.779	3.321	0.000	0.000
10 PPM	S1R4897	7.47	15.7	47	62.9183	21.0174	33.4043	7.4	2.146	4.884	0.074	0.296
10 PPM	S1R4903	8.04	16.3	47	58.4577	20.2736	34.6809	2.8	0.280	2.520	0.000	0.000
10 PPM	S1R4914	6.71	14.8	42	62.5931	22.0566	35.2381	7.6	2.280	5.016	0.304	0.000
10 PPM	S1R4916	6.02	13.2	38	63.1229	21.9269	34.7368	10.3	3.296	6.386	0.309	0.515
10 PPM	S1R4918	5.61	12.7	36	64.1711	22.6381	35.2778	5.9	1.062	4.779	0.059	0.000
10 PPM	S1R4919	7.54	16.1	44	58.3554	21.3528	36.5909	3.9	0.624	3.237	0.039	0.000

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TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN BLOOD CHEMISTRY VALUES

		GLUCOSE (MG/DL)		BLOOD UREA NITROGEN (MG/DL)		ALT (IU/L)		AST (IU/L)	
MALE	N	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.
MONTH 3									
0 PPM	15	120.6	13.74	16.3	1.84	21.4	2.67	45.3	7.26
100 PPM	15	129.5	11.70	18.5*	1.36	29.1#	5.47	52.2	9.96
30 PPM	15	128.4	14.17	19.1*	1.92	27.1#	5.92	51.2	16.33
10 PPM	15	120.1	9.28	18.2*	2.01	30.4#	9.68	57.9	21.90
MONTH 6									
0 PPM	15	119.0	13.29	17.5	1.36	24.1	3.75	49.7	14.98
100 PPM	15	110.3	6.29	17.3	2.09	42.1#	25.44	74.7*	31.24
30 PPM	15	135.1*	14.20	17.3	1.62	30.7	12.30	53.3	21.65
10 PPM	14	129.3*	9.42	16.8	1.47	32.0	11.68	59.5	27.48
MONTH 12									
0 PPM	14	154.3	26.17	16.4	2.50	33.5	19.45	79.1	44.61
100 PPM	14	137.5	17.07	17.1	1.44	65.2*	31.20	83.2	29.06
30 PPM	15	140.9	17.98	17.7	2.02	39.8	12.52	71.1	13.49
10 PPM	15	157.3	27.89	17.9	1.28	43.9	23.37	76.7	31.21
MONTH 18									
0 PPM	15	123.4	26.39	18.1	3.38	34.1	10.68	99.1	68.14
100 PPM	15	131.1	19.61	15.4*	1.59	46.1	25.40	63.1	17.39
30 PPM	15	144.9*	16.54	15.7*	1.83	66.0*	23.51	75.6	38.83
10 PPM	15	146.1*	21.34	17.3	3.24	45.8	13.33	63.4	16.27
MONTH 24									
0 PPM	15	122.5	23.07	16.5	3.16	33.4	8.10	64.9	25.76
100 PPM	15	110.1	20.97	15.8	2.04	67.1#	42.10	95.8*	35.88
30 PPM	15	122.3	25.12	15.9	5.30	31.2	14.62	67.9	31.99
10 PPM	15	126.6	26.52	16.4	9.19	30.2	7.83	74.3	30.21

* : P <= .05. TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05. TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
MEAN BLOOD CHEMISTRY VALUES (TBILI, ALB, TPROT, ALKPHOS, CPK, CA) WITH STANDARD DEVIATIONS

MALE	N	TOTAL BILIRUBIN (MG/DL) MEAN	TOTAL BILIRUBIN (MG/DL) S.DEV	ALBUMIN (GM/DL) MEAN	ALBUMIN (GM/DL) S.DEV	TOTAL PROTEIN (GM/DL) MEAN	TOTAL PROTEIN (GM/DL) S.DEV	ALKALINE PHOSPHATASE (IU/L) MEAN	ALKALINE PHOSPHATASE (IU/L) S.DEV	CREATINE PHOSPHOKINASE (IU/L) MEAN	CREATINE PHOSPHOKINASE (IU/L) S.DEV	CALCIUM (MG/DL) MEAN	CALCIUM (MG/DL) S.DEV
MONTH 3													
0 PPM	15	0.6	0.16	4.4	0.34	6.8	0.34	91.1	26.22	100.7	26.46	11.1	0.68
100 PPM	15	0.9*	0.22	4.9*	0.27	6.9	0.25	133.9*	44.69	79.4	29.87	10.8	0.34
30 PPM	15	1.0*	0.26	4.5	0.18	6.6	0.18	130.7*	40.24	111.4	95.63	10.9	0.34
10 PPM	15	0.9*	0.24	4.3	0.20	6.6	0.24	138.6*	24.06	105.5	32.90	11.2	0.25
MONTH 6													
0 PPM	15	0.8	0.19	4.6	0.20	7.0	0.36	97.1	40.41	89.9	41.32	11.5	0.40
100 PPM	15	1.2*	0.45	5.4*	0.19	7.3	0.23	121.2	97.39	111.7	60.53	11.4	0.19
30 PPM	15	0.6	0.16	4.7	0.39	7.0	0.26	117.7	93.05	52.1	20.56	11.5	0.28
10 PPM	14	0.9	0.22	4.8	0.20	6.9	0.24	112.1	23.32	99.5	53.49	11.6	0.23
MONTH 12													
0 PPM	14	0.7	0.20	3.7	0.20	6.6	0.27	105.8	43.94	79.7	47.61	10.5	0.30
100 PPM	14	0.7	0.23	4.0*	0.30	6.7	0.25	133.1	39.18	58.2	15.39	10.5	0.25
30 PPM	15	0.7	0.16	3.8	0.24	6.7	0.27	121.6	39.46	59.3	18.79	10.5	0.24
10 PPM	15	0.6	0.17	3.7	0.20	6.5*	0.27	105.7	25.62	112.6	134.42	10.5.	0.23
MONTH 18													
0 PPM	15	0.9	0.35	3.2	0.38	7.1	0.61	85.2	33.76	79.9	74.52	11.1	0.93
100 PPM	15	0.6#	0.14	3.6*	0.31	7.1	0.40	206.2	396.66	47.5	12.69	10.1*	0.90
30 PPM	15	0.4#	0.10	3.4	0.14	7.4	0.45	79.5	31.43	28.8#	12.45	11.4	0.52
10 PPM	15	0.5#	0.12	3.4	0.20	7.3	0.27	77.5	19.81	42.1#	28.68	11.3	0.70
MONTH 24													
0 PPM	15	0.4	0.25	2.8	0.23	6.9	0.44	70.1	25.53	111.1	68.04	10.9	0.43
100 PPM	15	0.4	0.09	3.3*	0.27	7.1	0.42	103.5*	38.16	101.9	52.19	11.1	0.31
30 PPM	15	0.3	0.12	2.9	0.31	6.6	0.40	82.7	31.63	75.0	23.35	10.9	0.41
10 PPM	15	0.4	0.22	2.9	0.32	6.7	0.62	89.1	40.13	84.9	23.56	11.1	0.69

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=3

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	A1R3518	112	17	20	38	0.6	4.2	6.8	107	115	11.5
0 PPM	A1R3527	140	21	22	42	0.5	4.4	6.6	106	104	11.3
0 PPM	A1R3532	138	17	20	36	0.9	4.4	7.1	58	69	11.2
0 PPM	A1R3534	112	17	22	50	0.8	5.1	7.8	105	140	12.4
0 PPM	A1R3537	129	15	28	59	0.8	4.4	6.6	100	144	10.8
0 PPM	A1R3540	102	17	21	42	0.5	4.1	6.5	80	120	10.8
0 PPM	A1R3542	111	14	22	43	0.7	4.4	6.7	60	80	10.8
0 PPM	A1R3548	98	14	21	46	0.5	3.9	6.5	125	80	11.2
0 PPM	A1R3552	141	16	18	38	0.5	4.2	6.8	71	74	11.1
0 PPM	A1R3559	108	17	18	44	0.5	4.4	6.6	52	109	11.6
0 PPM	A1R3562	130	16	21	51	0.4	4.1	6.5	73	85	9.3
0 PPM	A1R3564	125	18	24	50	0.8	5.1	6.6	125	72	12.0
0 PPM	A1R3565	129	17	20	47	0.9	4.6	6.8	128	113	11.0
0 PPM	A1R3567	114	15	19	36	0.6	4.2	6.5	69	72	11.2
0 PPM	A1R3569	120	14	25	58	0.7	4.3	7.0	108	134	11.0
100 PPM	D1R3701	147	18	32	54	0.9	5.4	7.5	177	179	11.3
100 PPM	D1R3703	112	17	22	38	0.6	4.6	6.7	59	65	10.8
100 PPM	D1R3705	152	19	29	52	0.9	5.1	6.9	132	77	10.6
100 PPM	D1R3706	130	18	26	49	0.7	5.0	6.9	158	71	10.9
100 PPM	D1R3711	118	19	29	49	1.3	4.9	7.0	114	86	11.3
100 PPM	D1R3714	118	18	34	57	1.1	5.2	7.0	62	75	10.4
100 PPM	D1R3719	145	17	24	37	0.9	4.5	6.9	185	75	10.6
100 PPM	D1R3723	124	20	20	36	1.0	4.5	6.5	76	71	10.3
100 PPM	D1R3724	134	19	40	67	1.2	5.0	7.1	140	79	11.1
100 PPM	D1R3727	135	16	25	47	0.7	4.6	6.6	170	59	11.2
100 PPM	D1R3734	120	20	37	55	0.6	4.8	6.6	186	55	11.0
100 PPM	D1R3740	127	19	30	64	0.9	5.1	6.8	123	57	10.3
100 PPM	D1R3748	135	17	30	53	0.8	4.6	6.9	184	81	10.9
100 PPM	D1R3749	123	19	26	67	1.2	4.8	6.9	113	98	10.6
100 PPM	D1R3754	123	21	32	58	0.8	5.0	6.6	109	63	10.8

C01559

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=3

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	F1R3767	156	18	19	44	1.1	4.6	6.5	107	75	10.3
30 PPM	E1R3770	109	18	35	98	1.6	4.8	6.8	125	345	10.4
30 PPM	E1R3771	152	21	32	62	0.8	4.5	6.7	168	93	10.9
30 PPM	E1R3773	120	22	23	36	0.8	4.3	6.5	124	92	10.7
30 PPM	E1R3774	119	21	38	70	1.1	4.7	6.9	117	137	11.0
30 PPM	E1R3778	119	16	32	47	0.8	4.4	6.5	172	64	11.1
30 PPM	E1R3780	141	21	30	52	1.2	4.4	6.5	160	67	11.0
30 PPM	E1R3783	125	19	34	62	1.2	4.4	6.5	180	338	10.7
30 PPM	E1R3787	120	17	26	41	0.7	4.6	6.5	123	56	10.5
30 PPM	E1R3790	142	20	20	39	0.8	4.6	7.0	78	69	11.2
30 PPM	E1R3791	126	20	24	44	1.1	4.3	6.5	170	59	11.1
30 PPM	E1R3796	124	19	24	36	0.6	4.6	6.5	188	85	11.3
30 PPM	F1R3800	137	18	23	44	0.8	4.3	6.4	92	64	10.4
30 PPM	E1R3801	110	21	24	50	1.1	4.8	6.8	99	69	11.2
30 PPM	F1R3806	126	16	22	43	0.9	4.8	6.7	58	58	11.2
10 PPM	F1R3811	111	20	24	40	0.9	4.7	6.8	151	129	11.2
10 PPM	F1R3815	126	15	27	43	0.8	4.5	6.7	133	78	11.1
10 PPM	F1R3818	125	20	25	47	1.1	4.2	6.8	105	86	11.3
10 PPM	F1R3822	126	18	32	63	0.7	4.4	6.7	110	73	11.0
10 PPM	F1R3824	133	16	25	50	0.7	4.3	6.6	138	63	11.0
10 PPM	F1R3831	130	18	32	62	0.8	4.6	7.0	176	140	11.7
10 PPM	F1R3832	120	18	33	58	0.9	4.3	6.4	169	106	11.0
10 PPM	F1R3834	114	19	29	64	1.2	4.6	6.8	122	154	11.2
10 PPM	F1R3836	112	17	63	128	0.7	4.1	6.6	183	134	11.5
10 PPM	F1R3838	108	20	23	36	0.7	4.1	6.1	134	55	11.3
10 PPM	F1R3839	128	22	28	40	0.7	4.4	6.3	107	73	11.4
10 PPM	F1R3840	120	17	23	53	1.5	4.3	6.6	134	108	10.9
10 PPM	F1R3844	121	20	30	58	0.6	4.5	6.6	135	125	11.4
10 PPM	F1R3847	127	18	29	71	0.9	4.1	6.5	128	153	10.9
10 PPM	F1R3852	100	15	33	56	0.8	4.1	6.3	154	105	10.8

C01560

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=6

DOSE	ANIMAL	GLU	BUN	ALT	AST	THILY	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	A1R3519	133	19	18	39	0.6	4.3	6.4	123	70	10.6
0 PPM	A1R3524	139	17	21	54	0.8	4.4	7.3	109	82	11.6
0 PPM	A1R3529	130	16	20	25	0.6	4.7	6.7	72	51	11.3
0 PPM	A1R3533	124	19	28	41	0.8	4.8	7.5	85	119	11.7
0 PPM	A1R3537	109	16	27	58	1.1	4.9	7.0	110	204	11.6
0 PPM	A1R3541	124	18	19	35	0.7	4.5	7.2	65	58	11.3
0 PPM	A1R3547	115	19	29	28	1.1	4.8	7.5	114	62	12.2
0 PPM	A1R3550	128	15	25	43	0.6	4.7	7.0	213	57	11.6
0 PPM	A1R3553	99	20	29	53	0.7	4.6	7.1	62	57	11.9
0 PPM	A1R3557	109	17	22	74	1.1	4.7	7.3	120	119	11.6
0 PPM	A1R3559	100	17	21	51	0.9	4.5	6.7	50	85	11.4
0 PPM	A1R3562	133	18	28	55	0.6	4.7	6.6	69	79	10.9
0 PPM	A1R3567	129	18	23	49	0.8	4.6	6.8	69	85	11.4
0 PPM	A1R3573	102	17	26	74	1.0	5.0	7.5	118	144	11.7
0 PPM	A1R3575	111	17	25	67	0.7	4.4	6.7	78	77	11.0
100 PPM	D1R3696	106	15	22	37	2.1	5.1	7.3	121	62	11.3
100 PPM	D1R3703	105	14	43	80	0.7	5.4	7.4	62	79	11.5
100 PPM	D1R3707	115	19	121	153	1.2	5.3	7.2	171	134	11.4
100 PPM	D1R3710	111	16	49	74	1.1	5.5	7.2	100	143	11.0
100 PPM	D1R3716	104	18	29	54	1.7	5.7	7.6	133	88	11.5
100 PPM	D1R3728	103	16	31	58	1.2	5.3	7.5	145	143	11.5
100 PPM	D1R3731	108	18	34	80	0.8	5.4	7.3	106	159	11.7
100 PPM	D1R3733	114	18	43	100	1.1	5.0	6.9	149	269	11.3
100 PPM	D1R3734	110	19	37	81	1.0	5.3	6.7	176	69	11.1
100 PPM	D1R3736	113	22	76	126	1.7	5.2	7.4	121	190	11.5
100 PPM	D1R3738	108	17	27	49	1.5	5.4	7.4	172	62	11.6
100 PPM	D1R3743	118	17	28	55	0.4	5.6	7.2	57	63	11.5
100 PPM	D1R3746	111	14	29	60	1.0	5.4	7.1	84	78	11.2
100 PPM	D1R3754	103	18	31	64	0.9	5.6	7.3	103	67	11.3
100 PPM	D1R3757	126	18	31	49	1.6	5.4	7.3	118	69	11.3

C01561

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=6

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	E1R3762	111	17	33	52	0.6	4.9	6.9	118	47	11.3
30 PPM	E1R3763	116	19	43	74	0.5	4.7	7.3	183	40	11.9
30 PPM	E1R3764	143	16	42	64	0.5	4.7	7.2	118	39	11.6
30 PPM	E1R3765	138	18	26	49	0.5	4.4	6.7	118	49	11.2
30 PPM	E1R3770	130	19	24	53	0.8	4.8	6.7	125	88	11.3
30 PPM	E1R3773	131	17	15	21	0.6	4.0	6.6	82	52	11.6
30 PPM	E1R3774	124	20	41	80	0.7	5.0	7.3	111	110	12.0
30 PPM	E1R3779	142	19	21	43	0.6	4.6	6.7	126	44	11.1
30 PPM	E1R3784	141	16	17	32	0.8	4.9	7.2	131	43	11.7
30 PPM	E1R3792	116	15	59	102	0.5	4.4	7.0	175	35	11.1
30 PPM	E1R3794	158	16	19	32	0.7	5.0	7.1	122	54	11.6
30 PPM	E1R3804	158	16	27	33	0.8	4.1	6.5	127	51	11.6
30 PPM	E1R3806	137	15	24	47	1.0	5.3	7.1	52	42	11.7
30 PPM	E1R3808	147	17	28	46	0.4	4.1	6.9	89	33	11.3
30 PPM	E1R3810	135	19	42	72	0.6	5.0	7.1	88	55	11.3
10 PPM	F1R3811	118	17	20	45	1.2	5.0	7.2	107	219	11.8
10 PPM	F1R3816	126	14	23	39	0.8	4.8	7.2	134	74	11.3
10 PPM	F1R3817	131	15	22	35	0.7	4.8	6.9	91	46	11.3
10 PPM	F1R3823	118	18	40	52	0.7	4.3	6.8	76	75	11.7
10 PPM	F1R3826	146	15	30	59	0.9	4.5	6.8	150	170	11.2
10 PPM	F1R3827	122	18	23	40	0.9	4.9	6.6	110	57	11.7
10 PPM	F1R3831	133	17	33	49	0.9	4.9	7.2	151	108	11.8
10 PPM	F1R3833	135	19	28	35	0.5	4.8	6.7	94	66	11.4
10 PPM	F1R3834	125	17	41	73	1.2	4.9	7.3	129	121	12.0
10 PPM	F1R3837	131	16	32	64	1.0	5.0	6.9	110	58	11.6
10 PPM	F1R3839	132	19	60	85	0.8	4.8	6.7	101	97	11.6
10 PPM	F1R3846	133	17	23	49	1.2	4.7	7.1	75	153	11.7
10 PPM	F1R3853	112	16	24	39	0.8	4.6	6.8	122	42	11.3
10 PPM	F1R3854	132	16	52	134	0.9	4.9	7.1	125	155	11.7
10 PPM	F1R3855	145	18	29	95	0.5	4.6	6.6	107	52	11.5

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=12

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	A1R3516	147	18	22	56	0.9	3.6	6.9	139	72	11.0
0 PPM	A1R3517	150	16	16	40	0.5	3.8	7.1	104	43	10.8
0 PPM	A1R3520	124	16	15	43	0.4	3.8	6.6	49	42	10.5
0 PPM	A1R3522	134	15	65	123	0.6	3.7	6.7	108	61	10.4
0 PPM	A1R3527	155	18	37	67	0.6	3.9	6.8	102	80	10.8
0 PPM	A1R3535	141	17	23	56	0.6	3.8	6.8	113	103	10.6
0 PPM	A1R3543	183	17	33	85	1.0	3.9	7.0	115	88	10.7
0 PPM	A1R3546	178	17	37	118	0.9	4.0	6.9	107	234	10.4
0 PPM	A1R3550	185	18	32	79	1.0	3.9	6.9	225	89	10.5
0 PPM	A1R3551	165	20	41	88	0.6	3.9	6.7	95	65	10.2
0 PPM	A1R3554	214	18	87	212	0.6	3.5	6.3	88	105	10.3
0 PPM	A1R3568	123	14	18	43	0.7	3.3	6.2	48	50	10.4
0 PPM	A1R3570	125	9	23	54	0.5	3.6	6.5	72	39	9.8
0 PPM	A1R3575	143	16	23	63	0.4	3.5	6.9	70	58	10.4
0 PPM	A1R3580	148	17	31	59	0.7	3.9	7.1	152	66	10.9
100 PPM	D1R3696	118	19	79	92	0.7	4.0	7.0	159	39	10.7
100 PPM	D1R3699	125	19	66	78	0.7	4.0	6.8	165	56	10.5
100 PPM	D1R3711	132	16	94	96	0.6	4.2	7.0	114	75	10.5
100 PPM	D1R3714	130	16	62	95	0.6	4.5	7.0	79	39	10.5
100 PPM	D1R3715	133	15	84	90	0.6	3.7	6.3	129	46	10.1
100 PPM	D1R3720	118	18	32	53	0.8	4.5	7.0	192	57	10.5
100 PPM	D1R3721	136	16	40	74	0.7	3.7	6.7	91	67	10.4
100 PPM	D1R3722	145	17	34	52	0.7	3.5	6.4	71	55	10.4
100 PPM	D1R3727	141	17	40	69	0.6	4.0	6.6	144	52	10.4
100 PPM	D1R3732	115	16	31	50	0.9	3.8	6.3	152	70	10.5
100 PPM	D1R3733	165	20	63	73	0.7	4.0	6.7	158	79	11.2
100 PPM	D1R3736	165	18	43	60	1.5	4.0	6.7	86	48	10.2
100 PPM	D1R3737	140	16	83	80	0.6	4.5	6.6	150	37	10.6
100 PPM	D1R3747	132	17	147	155	0.7	3.9	6.6	115	66	10.7
100 PPM	D1R3748	168	16	80	131	0.6	3.9	7.0	192	87	10.7

001562

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=12

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	F1R3769	137	24	28	48	0.5	3.8	6.6	167	46	10.9
30 PPM	F1R3775	135	16	36	79	0.6	3.8	6.7	68	58	10.6
30 PPM	F1R3776	118	15	41	82	0.8	4.1	7.2	80	89	10.8
30 PPM	F1R3779	133	17	44	72	0.6	4.0	7.0	134	41	10.7
30 PPM	F1R3780	125	18	25	64	0.6	3.5	7.0	144	46	10.0
30 PPM	F1R3782	123	17	46	88	0.8	3.6	6.3	113	84	10.2
30 PPM	F1R3791	176	18	35	88	1.0	3.8	6.5	174	57	10.3
30 PPM	F1R3792	123	17	66	87	0.8	3.8	6.9	181	55	10.6
30 PPM	F1R3797	141	16	57	76	0.9	4.0	6.8	154	54	10.8
30 PPM	F1R3800	152	18	29	57	0.7	3.7	6.5	76	102	10.4
30 PPM	F1R3802	152	18	58	76	0.5	3.4	6.3	120	59	10.4
30 PPM	F1R3803	147	18	30	60	0.6	3.9	6.4	136	67	10.5
30 PPM	F1R3805	124	19	35	69	0.6	3.6	6.4	109	35	10.4
30 PPM	F1R3806	172	17	26	47	0.6	4.3	6.7	54	47	10.5
30 PPM	F1R3808	156	17	41	73	0.4	3.6	6.7	114	50	10.5
10 PPM	F1R3812	152	18	41	85	0.6	3.3	6.8	109	50	10.6
10 PPM	F1R3813	134	15	34	49	0.5	3.8	6.5	105	42	10.5
10 PPM	F1R3814	163	20	44	87	0.6	3.7	6.4	140	54	10.3
10 PPM	F1R3815	157	18	112	147	0.5	3.6	6.2	133	86	10.3
10 PPM	F1R3818	222	17	26	60	0.7	3.5	6.6	64	200	10.5
10 PPM	F1R3820	141	18	71	135	0.6	3.6	6.9	104	71	11.0
10 PPM	F1R3828	216	19	29	88	0.7	3.5	6.0	94	577	10.1
10 PPM	F1R3832	131	17	55	67	0.4	3.9	6.4	151	75	10.6
10 PPM	F1R3833	154	18	26	47	0.4	3.9	6.6	80	64	10.7
10 PPM	F1R3835	160	20	26	68	0.6	3.3	6.3	124	81	10.3
10 PPM	F1R3839	139	18	40	44	0.4	3.5	6.1	90	103	10.4
10 PPM	F1R3844	135	19	33	51	0.6	3.8	6.7	120	38	10.7
10 PPM	F1R3846	133	17	35	69	0.6	3.7	6.7	68	59	10.7
10 PPM	F1R3848	151	17	25	53	0.6	3.8	6.3	116	73	10.7
10 PPM	F1R3860	172	18	61	100	1.1	3.9	6.7	87	116	10.5

001563

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=18

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	A1R3519	151	19	41	94	0.7	3.2	6.8	128	37	10.6
0 PPM	A1R3521	125	29	59	317	0.2	2.1	5.5	164	79	10.5
0 PPM	A1R3528	148	19	24	55	0.6	3.2	7.0	57	39	11.9
0 PPM	A1R3531	143	18	42	98	1.0	3.4	7.4	56	34	12.0
0 PPM	A1R3538	129	15	38	93	0.7	3.3	6.8	113	96	10.9
0 PPM	A1R3539	132	16	24	54	0.9	3.7	8.1	82	35	11.8
0 PPM	A1R3542	107	18	30	61	1.1	3.4	7.2	41	49	11.5
0 PPM	A1R3552	117	21	23	54	1.1	3.3	7.4	55	41	12.0
0 PPM	A1R3553	127	17	44	74	0.9	3.4	7.5	65	83	11.9
0 PPM	A1R3555	140	17	35	84	1.1	3.3	7.3	124	108	11.1
0 PPM	A1R3561	135	17	26	61	0.9	3.4	7.6	90	59	10.2
0 PPM	A1R3565	126	15	23	62	0.9	3.3	6.6	87	41	9.0
0 PPM	A1R3567	134	17	34	133	0.9	3.2	7.7	66	77	10.9
0 PPM	A1R3574	91	17	24	79	0.2	2.6	6.7	82	87	10.1
0 PPM	A1R3577	46	17	45	168	1.6	3.4	7.3	68	334	12.4
100 PPM	D1R3697	120	14	21	42	0.6	3.8	6.9	64	39	10.1
100 PPM	D1R3700	115	15	91	78	0.5	3.5	6.9	119	33	10.0
100 PPM	D1R3707	128	16	101	85	0.5	3.9	7.1	136	66	9.8
100 PPM	D1R3713	149	14	50	63	0.6	3.5	7.3	90	78	10.0
100 PPM	D1R3717	170	17	56	68	0.4	3.8	7.5	143	46	9.7
100 PPM	D1R3723	139	19	17	34	0.5	3.5	6.7	63	35	9.2
100 PPM	D1R3724	160	14	22	71	0.5	3.0	6.1	1644	52	8.3
100 PPM	D1R3730	130	15	30	46	0.5	4.0	7.0	101	58	10.7
100 PPM	D1R3731	87	15	28	48	0.5	3.6	7.2	94	38	9.2
100 PPM	D1R3738	118	18	38	86	0.8	3.7	7.2	130	59	9.9
100 PPM	D1R3740	134	16	45	68	0.6	4.0	7.3	90	43	10.5
100 PPM	D1R3746	125	14	30	61	0.5	3.5	6.9	74	39	10.6
100 PPM	D1R3751	130	14	67	91	0.5	3.2	6.9	144	41	11.3
100 PPM	D1R3755	124	14	63	60	0.4	3.1	6.9	87	44	10.0
100 PPM	D1R3756	138	16	32	46	0.9	3.7	7.9	114	41	12.1

001564

TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=18

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	F1R3762	160	16	39	65	0.6	3.6	7.2	93	68	11.4
30 PPM	F1R3764	180	15	66	114	0.6	3.6	8.0	85	37	11.0
30 PPM	F1R3765	112	13	50	79	0.3	3.5	7.8	49	28	11.0
30 PPM	F1R3767	147	17	52	57	0.4	3.5	7.4	76	33	11.3
30 PPM	F1R3769	149	15	47	57	0.5	3.4	8.0	94	15	12.9
30 PPM	F1R3771	161	15	64	76	0.5	3.5	7.6	98	24	11.6
30 PPM	F1R3773	142	20	29	38	0.4	3.1	7.1	51	26	11.0
30 PPM	F1R3775	129	17	34	38	0.4	3.3	7.5	52	26	11.6
30 PPM	F1R3777	145	16	47	47	0.4	3.4	8.1	106	27	11.6
30 PPM	F1R3782	125	14	118	177	0.3	3.5	6.6	34	29	11.5
30 PPM	F1R3787	160	18	54	66	0.3	3.5	6.9	93	16	10.6
30 PPM	F1R3793	144	15	54	79	0.5	3.5	7.5	57	20	11.3
30 PPM	F1R3796	140	14	50	64	0.3	3.3	7.1	139	30	11.0
30 PPM	F1R3806	135	14	39	42	0.5	3.6	7.5	41	21	11.6
30 PPM	F1R3807	144	17	97	135	0.4	3.3	6.9	125	32	11.2
10 PPM	F1R3811	162	14	50	62	0.5	3.5	7.4	82	26	10.7
10 PPM	F1R3813	146	16	66	79	0.4	3.3	7.3	79	61	11.3
10 PPM	F1R3814	169	19	34	57	0.5	3.6	7.3	107	31	11.8
10 PPM	F1R3823	83	28	33	37	0.5	2.9	7.3	33	19	11.3
10 PPM	F1R3825	140	16	34	50	0.5	3.5	7.3	72	32	11.5
10 PPM	F1R3837	155	16	41	67	0.6	3.4	7.1	81	21	12.3
10 PPM	F1R3839	146	17	56	77	0.5	3.2	6.9	75	30	12.6
10 PPM	F1R3842	139	16	46	74	0.5	3.5	7.3	65	32	11.6
10 PPM	F1R3845	150	18	31	50	0.4	3.4	7.2	49	123	11.5
10 PPM	F1R3848	160	16	36	47	0.7	3.6	7.8	74	24	10.0
10 PPM	F1R3851	147	16	36	52	0.6	3.3	7.6	83	23	10.0
10 PPM	F1R3852	130	16	35	55	0.6	3.5	7.1	87	35	11.1
10 PPM	F1R3853	177	19	65	91	0.3	3.5	7.8	115	55	11.1
10 PPM	F1R3855	147	16	56	92	0.3	3.1	6.9	75	86	11.3
10 PPM	F1R3859	141	16	68	61	0.3	3.2	7.3	85	34	11.3

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TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=24

DOSE	ANIMAL	GLU	BUN	ALT	AST	THILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	A1R3518	130	14	26	52	0.2	2.6	6.6	118	87	10.5
0 PPM	A1R3524	138	23	29	42	0.6	2.7	7.1	74	51	11.5
0 PPM	A1R3528	141	15	28	47	0.2	3.0	6.8	39	63	10.8
0 PPM	A1R3531	109	14	36	60	0.3	3.1	7.1	55	72	11.0
0 PPM	A1R3534	67	20	21	142	0.3	2.7	5.9	61	190	11.1
0 PPM	A1R3538	147	12	38	69	0.2	2.8	6.4	66	69	10.5
0 PPM	A1R3542	96	15	35	50	0.6	3.0	7.0	37	54	11.6
0 PPM	A1R3548	122	15	32	48	0.4	2.9	7.0	97	108	10.9
0 PPM	A1R3554	158	17	43	74	0.2	3.0	6.6	29	73	11.0
0 PPM	A1R3557	117	16	42	66	0.6	3.0	7.3	109	90	11.2
0 PPM	A1R3562	134	17	33	53	0.1	2.4	6.8	68	76	10.1
0 PPM	A1R3564	116	19	27	50	0.5	2.5	6.9	77	187	10.5
0 PPM	A1R3569	143	22	29	74	1.0	2.7	7.4	58	299	10.3
0 PPM	A1R3573	105	14	29	50	0.7	3.1	7.7	86	101	11.3
0 PPM	A1R3578	115	15	53	97	0.4	2.6	7.3	77	146	10.9
100 PPM	D1R3700	109	18	58	72	0.3	3.2	6.9	108	99	10.7
100 PPM	D1R3702	123	18	117	110	0.4	3.1	6.9	140	55	10.8
100 PPM	D1R3706	123	14	123	119	0.5	3.3	7.6	169	58	11.5
100 PPM	D1R3709	107	14	40	56	0.3	3.2	6.6	82	117	11.0
100 PPM	D1R3713	112	13	39	67	0.3	3.1	7.2	77	105	11.2
100 PPM	D1R3718	112	16	41	57	0.3	3.7	7.5	109	86	11.1
100 PPM	D1R3725	132	17	42	70	0.3	3.5	7.2	94	63	10.9
100 PPM	D1R3730	132	18	48	97	0.4	3.5	7.6	70	212	11.4
100 PPM	D1R3739	84	13	62	154	0.5	3.4	7.1	51	88	11.3
100 PPM	D1R3741	116	17	70	133	0.4	3.3	7.9	161	215	11.1
100 PPM	D1R3746	119	15	41	70	0.5	3.3	7.1	62	54	11.5
100 PPM	D1R3752	50	19	50	107	0.3	3.7	6.9	76	111	10.6
100 PPM	D1R3755	94	14	41	79	0.2	2.6	7.5	113	136	10.6
100 PPM	D1R3758	120	17	185	172	0.4	3.4	6.9	160	48	10.8
100 PPM	D1R3760	119	14	49	74	0.3	3.1	6.3	81	81	11.3

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TABLE 14

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=24

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	E1R3761	103	15	22	55	0.2	2.4	6.1	58	71	10.7
30 PPM	E1R3763	140	19	31	59	0.4	2.6	6.9	104	74	11.2
30 PPM	E1R3767	135	16	33	66	0.5	2.9	6.5	88	94	11.4
30 PPM	E1R3769	116	13	27	68	0.4	3.0	6.9	89	100	11.4
30 PPM	E1R3773	139	32	23	43	0.6	2.8	6.3	71	53	11.3
30 PPM	E1R3776	93	11	20	52	0.4	2.6	7.0	54	77	10.4
30 PPM	E1R3779	112	18	21	55	0.2	3.1	6.3	81	46	11.0
30 PPM	E1R3781	74	16	29	74	0.4	2.9	7.4	57	109	10.5
30 PPM	E1R37A6	158	17	25	59	0.3	3.3	6.8	103	65	10.8
30 PPM	E1R37A8	132	15	24	56	0.2	2.7	6.1	58	96	9.9
30 PPM	E1R3791	160	15	26	57	0.3	3.3	6.5	104	51	10.7
30 PPM	E1R3794	109	15	21	44	0.2	3.0	6.3	91	55	11.1
30 PPM	E1R3799	133	14	37	59	0.3	2.9	6.7	154	41	10.8
30 PPM	E1R3803	91	7	57	173	0.4	3.6	7.1	70	113	11.2
30 PPM	E1R3807	140	16	72	99	0.2	2.9	6.2	109	80	10.9
10 PPM	F1R3811	146	13	22	41	0.4	3.0	6.6	83	85	10.8
10 PPM	F1R3815	86	48	25	163	0.6	2.3	5.3	175	91	9.9
10 PPM	F1R3817	138	10	20	61	0.2	2.8	5.9	47	81	10.5
10 PPM	F1R3822	135	17	35	80	0.3	3.1	7.5	88	57	10.9
10 PPM	F1R3826	173	13	36	57	0.3	3.1	6.6	108	85	11.3
10 PPM	F1R3829	86	13	38	107	0.6	3.5	6.9	63	122	11.1
10 PPM	F1R3832	113	14	49	81	0.3	3.1	6.6	124	94	10.9
10 PPM	F1R3837	146	16	33	55	0.5	2.9	6.4	75	47	11.6
10 PPM	F1R3841	128	17	20	64	0.2	2.4	6.2	140	83	10.5
10 PPM	F1R3845	119	18	24	54	0.2	2.8	6.7	50	112	12.1
10 PPM	F1R3848	130	15	27	57	0.4	2.9	6.7	79	125	11.3
10 PPM	F1R3851	162	15	28	56	0.5	2.9	6.7	92	85	11.3
10 PPM	F1R3853	129	14	33	76	0.2	3.0	7.4	126	46	10.9
10 PPM	F1R3856	69	7	34	98	1.0	3.5	7.8	20	89	12.8
10 PPM	F1R3858	139	16	29	65	0.3	2.8	6.8	66	72	11.0

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS

MEAN BLOOD CHEMISTRY VALUES

		GLUCOSE (MG/DL)		BLOOD UREA NITROGEN (MG/DL)		ALT (IU/L)		AST (IU/L)	
FEMALE	N	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.	MEAN	S.DEV.
MONTH 3									
0 PPM	15	138.9	9.79	19.7	1.62	22.6	4.87	48.0	9.20
100 PPM	15	125.1*	8.87	22.7#	4.10	20.6	3.29	43.8	5.92
30 PPM	14	136.3	11.46	24.1#	5.16	19.9	4.27	43.0	7.04
10 PPM	15	136.1	10.14	22.0	2.33	20.5	6.10	47.5	18.64
MONTH 6									
0 PPM	15	154.8	14.98	21.6	3.22	33.5	17.20	69.7	38.56
100 PPM	15	127.1*	13.45	23.5	2.59	24.1#	2.25	72.7	11.58
30 PPM	15	151.8	10.90	20.9	2.09	26.9	6.62	52.6	13.99
10 PPM	15	138.1*	9.52	21.8	2.31	32.7	14.40	66.1	34.82
MONTH 12									
0 PPM	15	134.9	10.51	19.8	2.14	34.1	15.17	68.1	38.77
100 PPM	15	127.9	20.28	20.3	1.95	61.2	74.68	87.9	113.65
30 PPM	14	128.9	11.02	18.5	2.20	32.0	9.41	61.7	14.67
10 PPM	15	135.7	8.47	18.9	2.70	36.8	15.73	64.5	21.13
MONTH 18									
0 PPM	15	123.5	15.51	18.1	2.49	48.7	11.60	70.1	24.40
100 PPM	15	127.5	14.77	20.3	2.34	68.5	25.24	76.3	39.08
30 PPM	15	128.7	12.28	18.6	2.87	41.9	11.83	68.2	16.81
10 PPM	15	133.1	17.70	16.1	3.23	43.9	7.45	56.7	11.13
MONTH 24									
0 PPM	15	122.2	13.75	17.9	4.10	40.0	10.11	67.8	30.03
100 PPM	15	112.2	8.87	16.3	3.27	40.5	8.72	64.0	24.34
30 PPM	15	113.1	18.67	21.9	19.13	30.1#	31.20	194.9	488.95
10 PPM	15	124.8	14.45	16.8	4.60	25.7#	8.29	61.1	21.09

* : P <= .05. TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05. TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
MEAN BLOOD CHEMISTRY VALUES (TBILI, ALB, TPROT, ALKPHOS, CPK, CA) WITH STANDARD DEVIATIONS

		TOTAL BILIRUBIN (MG/DL)		ALBUMIN (GM/DL)		TOTAL PROTEIN (GM/DL)		ALKALINE PHOSPHATASE (IU/L)		CREATINE PHOSPHOKINASE (IU/L)		CALCIUM (MG/DL)	
FEMALE	N	MEAN	S.DEV	MEAN	S.DEV	MEAN	S.DEV	MEAN	S.DEV	MEAN	S.DEV	MEAN	S.DEV
MONTH 3													
0 PPM	15	0.6	0.18	5.3	0.45	7.2	0.41	83.7	32.29	93.9	51.44	11.0	0.55
100 PPM	15	0.5	0.11	5.4	0.30	7.2	0.29	92.4	29.97	85.3	25.29	10.7	0.50
30 PPM	14	0.6	0.11	5.3	0.33	7.1	0.33	91.0	27.97	125.3	101.23	11.4	0.49
10 PPM	15	0.7	0.29	5.2	0.44	7.1	0.47	78.3	15.00	98.2	46.67	11.7*	0.45
MONTH 6													
0 PPM	15	0.6	0.14	5.9	0.65	7.4	0.64	77.8	30.58	56.5	14.79	11.7	0.53
100 PPM	15	0.5	0.15	6.0	0.28	7.3	0.30	81.1	24.26	70.9	32.34	11.3*	0.31
30 PPM	15	0.5	0.09	5.7	0.41	7.2	0.35	95.1	25.07	51.5	13.62	11.4	0.32
10 PPM	15	0.6	0.22	5.7	0.51	7.1	0.47	89.0	32.51	54.3	10.38	11.7	0.39
MONTH 12													
0 PPM	15	0.8	0.38	4.3	0.26	7.3	0.52	76.5	30.01	54.6	20.02	11.2	0.60
100 PPM	15	0.5#	0.17	4.5*	0.38	7.3	0.46	96.3	37.34	105.9	112.41	10.9	0.35
30 PPM	14	0.5#	0.10	4.4	0.13	7.3	0.29	91.3	36.81	47.3	15.09	10.9	0.22
10 PPM	15	0.6	0.21	4.2	0.25	7.2	0.35	72.6	23.66	37.3#	7.59	10.9	0.26
MONTH 18													
0 PPM	15	0.6	0.26	3.9	0.23	7.9	0.57	65.5	32.10	37.3	9.81	11.4	0.53
100 PPM	15	0.5	0.11	4.2*	0.37	8.2	0.61	67.1	20.46	26.3#	15.85	12.0	0.41
30 PPM	15	0.5	0.20	3.8	0.22	8.3	0.67	37.1*	11.83	31.1#	17.81	10.9*	1.00
10 PPM	15	0.5*	0.11	3.7	0.13	7.8	0.48	41.9*	17.48	36.7#	34.72	11.0	0.50
MONTH 24													
0 PPM	15	0.6	0.31	3.4	0.21	7.6	0.69	68.7	33.39	68.4	32.23	11.5	0.64
100 PPM	15	0.3#	0.14	3.5	0.34	7.6	0.48	97.9	40.93	55.7	19.04	11.3	0.57
30 PPM	15	0.4	0.13	3.2	0.43	7.3	0.89	88.3	118.63	125.5#	88.91	11.0	0.61
10 PPM	15	0.8	0.71	3.4	0.29	7.5	0.93	56.7	26.47	101.1#	42.27	11.6	0.96

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=3

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	N1R4576	143	22	20	47	0.5	4.8	6.8	128	71	10.1
0 PPM	N1R4578	150	22	18	49	0.8	5.1	7.0	61	95	10.7
0 PPM	N1R4582	129	20	17	55	0.8	5.9	7.8	152	150	11.7
0 PPM	N1R4583	147	18	19	41	0.5	4.9	7.1	61	58	10.6
0 PPM	N1R4584	129	19	29	66	0.5	4.8	7.1	95	234	11.2
0 PPM	N1R4592	134	17	25	62	0.6	5.2	7.0	128	168	11.3
0 PPM	N1R4610	143	21	32	57	0.7	5.9	7.8	68	60	12.2
0 PPM	N1R4612	147	20	19	39	0.5	4.8	6.6	89	58	10.8
0 PPM	N1R4613	129	19	19	41	0.5	4.9	7.0	61	50	10.6
0 PPM	N1R4619	139	18	22	51	1.0	5.3	6.9	65	94	11.2
0 PPM	N1R4621	131	19	23	49	0.5	4.9	7.1	67	80	10.7
0 PPM	N1R4626	163	20	28	48	0.4	5.3	7.1	120	58	10.6
0 PPM	N1R4627	133	18	16	43	0.5	5.7	7.0	40	66	10.9
0 PPM	N1R4633	134	22	25	32	0.8	5.9	8.0	70	90	11.4
0 PPM	N1R4640	133	21	27	40	0.9	5.9	7.6	58	76	11.7
100 PPM	Q1R4757	130	16	20	32	0.4	5.5	7.4	103	64	10.1
100 PPM	Q1R4764	122	22	24	42	0.4	5.8	7.4	49	125	10.1
100 PPM	Q1R4766	107	20	20	45	0.5	5.0	6.9	100	66	10.5
100 PPM	Q1R4772	120	19	20	43	0.6	5.3	7.0	110	66	10.9
100 PPM	Q1R4783	118	25	25	47	0.4	5.2	7.0	135	78	10.8
100 PPM	Q1R4785	128	23	18	38	0.5	5.3	7.1	76	79	10.7
100 PPM	Q1R4790	130	16	22	44	0.5	5.5	7.4	98	71	10.8
100 PPM	Q1R4791	131	20	18	51	0.5	5.5	7.4	99	91	11.0
100 PPM	Q1R4792	143	30	17	44	0.6	5.6	7.4	73	128	11.2
100 PPM	Q1R4793	131	28	29	55	0.6	5.2	7.4	138	133	11.4
100 PPM	Q1R4808	118	25	22	46	0.7	5.3	6.9	48	75	9.7
100 PPM	Q1R4812	135	23	19	42	0.6	5.3	7.1	52	103	11.1
100 PPM	Q1R4814	122	21	18	35	0.5	5.1	6.9	91	56	10.7
100 PPM	Q1R4816	126	26	19	50	0.7	6.2	7.9	79	64	11.3
100 PPM	Q1R4819	116	26	18	43	0.7	5.4	6.9	135	81	10.1

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=3

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	R1R4A22	118	34	15	36	0.5	5.3	6.9	97	67	10.4
30 PPM	R1R4A23	146	30	24	58	0.8	5.5	7.3	79	92	10.5
30 PPM	R1R4A30	136	20	19	36	0.6	5.7	7.3	91	60	11.4
30 PPM	R1R4A33	129	17	22	39	0.7	5.0	6.6	46	92	11.5
30 PPM	R1R4A36	145	31	18	36	0.6	4.7	6.6	59	111	11.5
30 PPM	R1R4A37	132	20	21	42	0.6	5.4	7.0	76	461	11.9
30 PPM	R1R4A42	130	28	13	52	0.6	5.2	7.1	135	142	10.9
30 PPM	R1R4A48	123	27	23	52	0.7	5.8	7.5	121	164	11.8
30 PPM	R1R4A50	157	23	31	43	0.6	5.1	7.1	116	75	11.2
30 PPM	R1R4A53	138	23	18	38	0.6	5.0	7.1	78	106	11.6
30 PPM	R1R4A54	133	22	18	38	0.4	5.2	7.3	67	117	11.2
30 PPM	R1R4A56	131	16	22	51	0.5	5.1	6.9	125	68	11.8
30 PPM	R1R4A60	139	22	17	40	0.4	5.1	6.7	112	72	11.0
30 PPM	R1R4A64	129	22	18	45	0.7	5.2	6.9	54	196	12.1
30 PPM	R1R4A65	159	26	19	39	0.7	5.9	7.8	109	56	11.5
10 PPM	S1R4A71	163	18	17	43	0.5	5.6	7.4	85	46	11.7
10 PPM	S1R4A75	135	22	15	32	0.4	5.1	6.6	88	32	11.5
10 PPM	S1R4A79	140	21	16	42	0.4	5.3	7.1	69	48	11.8
10 PPM	S1R4A80	125	21	18	46	0.6	5.9	7.9	54	79	12.0
10 PPM	S1R4A81	130	19	37	82	0.5	5.3	7.3	68	148	11.4
10 PPM	S1R4A84	136	25	17	41	0.5	5.0	7.2	96	115	12.2
10 PPM	S1R4A85	138	27	15	36	0.5	5.2	7.1	88	49	11.7
10 PPM	S1R4A86	153	24	19	2	1.2	6.2	8.0	56	78	12.6
10 PPM	S1R4A89	133	21	24	45	0.7	5.2	7.2	86	76	11.6
10 PPM	S1R4A96	130	21	31	76	0.8	5.5	7.5	96	128	11.6
10 PPM	S1R4A97	134	22	19	51	0.7	4.9	7.0	59	174	11.0
10 PPM	S1R4901	139	22	18	46	0.6	5.2	7.0	69	81	11.2
10 PPM	S1R4902	126	24	22	57	1.4	4.7	6.7	74	119	12.0
10 PPM	S1R4905	130	23	20	61	0.9	4.7	6.6	91	179	11.8
10 PPM	S1R4915	129	20	19	53	0.7	4.6	6.3	96	121	10.9

001571

TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=6

DOSE	ANIMAL	GLU	BUN	ALT	AST	THILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	N1R4582	178	21	21	37	0.9	7.2	7.7	137	71	12.9
0 PPM	N1R4584	172	22	55	118	0.6	5.8	8.9	125	55	11.2
0 PPM	N1R4586	159	23	88	183	0.5	6.5	7.9	85	41	12.2
0 PPM	N1R4590	183	22	26	48	0.6	5.6	7.2	101	69	11.8
0 PPM	N1R4598	141	20	20	48	0.6	5.8	7.2	51	33	11.6
0 PPM	N1R4603	161	22	32	71	0.4	6.1	7.5	39	85	11.6
0 PPM	N1R4607	147	23	35	96	0.5	5.5	7.0	61	49	11.4
0 PPM	N1R4616	150	18	25	56	0.4	5.2	6.9	55	52	11.0
0 PPM	N1R4619	140	18	26	57	0.6	6.0	7.2	57	66	11.8
0 PPM	N1R4621	154	20	26	47	0.7	6.9	8.1	51	73	12.2
0 PPM	N1R4622	160	18	34	79	0.5	5.6	7.2	108	50	11.0
0 PPM	N1R4629	130	20	33	58	0.4	4.9	6.3	98	55	11.4
0 PPM	N1R4631	137	22	25	55	0.4	5.2	6.7	90	32	11.3
0 PPM	N1R4632	154	24	27	30	0.7	6.4	8.0	50	59	12.3
0 PPM	N1R4639	156	31	30	62	0.6	6.4	7.6	59	57	11.8
100 PPM	Q1R4759	121	25	26	68	0.7	6.1	7.5	104	70	12.0
100 PPM	Q1R4760	122	23	25	80	0.8	5.7	7.3	99	77	11.5
100 PPM	Q1R4764	167	22	26	54	0.3	6.1	7.4	40	73	11.3
100 PPM	Q1R4771	124	21	23	64	0.5	5.9	7.3	91	55	11.7
100 PPM	Q1R4773	118	24	25	70	0.5	6.6	7.7	106	65	11.4
100 PPM	Q1R4774	116	20	20	74	0.4	5.7	6.8	67	50	11.0
100 PPM	Q1R4776	129	29	21	78	0.3	6.1	7.2	52	59	10.9
100 PPM	Q1R4785	119	24	24	92	0.4	5.8	7.2	71	53	11.4
100 PPM	Q1R4786	120	25	23	73	0.4	5.6	6.9	85	67	11.1
100 PPM	Q1R4794	123	23	25	59	0.5	5.8	6.9	98	35	11.0
100 PPM	Q1R4798	121	26	22	85	0.5	5.9	7.3	53	161	11.1
100 PPM	Q1R4803	146	21	28	60	0.4	6.4	7.5	110	68	11.5
100 PPM	Q1R4808	119	27	27	94	0.4	6.0	7.4	94	45	11.2
100 PPM	Q1R4812	135	20	22	70	0.3	5.7	7.2	45	58	11.3
100 PPM	Q1R4814	126	23	24	70	0.7	6.2	7.9	102	127	11.7

001572

TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=6

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	R1R4A22	142	23	25	52	0.7	6.2	7.6	94	57	11.8
30 PPM	R1R4A26	140	19	26	44	0.5	5.7	7.8	113	60	11.5
30 PPM	R1R4A29	141	19	24	49	0.5	6.5	7.4	88	53	11.6
30 PPM	R1R4A32	152	22	27	46	0.4	5.8	7.2	115	35	11.4
30 PPM	R1R4A35	152	20	23	40	0.4	5.1	6.7	133	44	10.8
30 PPM	R1R4A38	149	24	45	76	0.5	6.0	7.6	97	37	11.5
30 PPM	R1R4A50	180	23	29	71	0.7	5.7	7.2	117	81	11.2
30 PPM	R1R4A53	154	22	23	42	0.5	5.2	7.0	76	57	11.3
30 PPM	R1R4A54	144	21	26	45	0.5	5.8	7.3	70	53	11.1
30 PPM	R1R4A56	145	17	37	78	0.6	5.6	7.4	119	67	11.9
30 PPM	R1R4A58	160	19	19	54	0.5	5.5	6.8	82	47	11.4
30 PPM	R1R4A60	147	20	31	69	0.5	6.0	7.2	112	67	11.6
30 PPM	R1R4A67	145	23	24	45	0.6	5.0	7.2	77	41	11.2
30 PPM	R1R4A68	161	23	22	44	0.4	5.4	6.7	34	34	10.8
30 PPM	R1R4A70	165	19	22	34	0.5	5.4	6.7	100	40	11.3
10 PPM	S1R4A73	157	22	22	40	0.7	4.6	6.4	113	52	11.1
10 PPM	S1R4A76	132	22	24	53	0.5	5.7	7.3	73	41	11.3
10 PPM	S1R4A77	128	21	29	40	0.8	6.1	7.8	111	47	12.1
10 PPM	S1R4A78	129	24	32	53	0.6	6.0	7.1	43	50	11.4
10 PPM	S1R4A81	134	20	33	67	0.4	5.6	7.3	64	46	11.7
10 PPM	S1R4A87	151	21	33	71	1.2	5.6	7.0	85	65	11.7
10 PPM	S1R4A90	126	25	26	48	0.6	5.4	7.0	123	44	12.2
10 PPM	S1R4A91	155	23	79	181	1.0	6.3	8.1	110	76	12.1
10 PPM	S1R4A98	139	19	44	87	0.5	6.1	7.6	84	48	11.6
10 PPM	S1R4901	136	20	33	72	0.7	5.9	7.0	98	56	11.5
10 PPM	S1R4907	135	25	26	43	0.6	5.3	6.6	126	46	11.8
10 PPM	S1R4912	136	24	24	47	0.5	6.6	7.6	54	56	12.4
10 PPM	S1R4913	132	18	39	77	0.4	5.5	6.8	20	52	11.5
10 PPM	S1R4915	141	19	19	53	0.5	5.4	6.7	104	68	11.1
10 PPM	S1R4918	141	24	27	59	0.6	5.0	6.9	127	68	11.5

001573

TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=12

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	N1R457B	146	24	27	48	1.2	4.1	7.3	71	62	11.7
0 PPM	N1R4582	124	18	22	42	1.5	4.7	8.6	134	82	12.5
0 PPM	N1R4585	132	24	33	60	0.8	4.5	7.6	84	42	11.5
0 PPM	N1R4588	137	20	23	47	0.5	4.4	7.0	44	56	10.8
0 PPM	N1R4589	132	19	67	183	0.7	4.6	7.7	104	50	11.7
0 PPM	N1R4590	136	19	24	46	0.6	4.5	7.3	84	38	11.3
0 PPM	N1R4601	143	20	40	59	0.6	4.1	7.3	127	41	10.8
0 PPM	N1R4608	131	18	24	51	1.1	4.2	7.2	39	60	11.1
0 PPM	N1R4610	127	21	25	62	1.0	4.1	7.1	72	104	10.7
0 PPM	N1R4620	146	19	31	51	0.6	4.1	7.0	71	55	10.9
0 PPM	N1R4629	136	18	67	119	0.4	3.9	6.7	80	40	10.9
0 PPM	N1R4630	157	22	42	79	0.5	3.8	6.6	54	37	10.5
0 PPM	N1R4631	128	20	41	94	0.5	4.4	7.4	99	29	10.8
0 PPM	N1R4632	113	18	19	33	1.4	4.3	8.2	43	76	12.4
0 PPM	N1R4640	135	17	26	47	0.2	4.4	7.2	42	47	11.1
100 PPM	Q1R4757	128	21	20	39	0.6	4.7	7.7	119	55	11.0
100 PPM	Q1R4760	125	21	21	47	0.5	4.6	7.3	82	462	10.9
100 PPM	Q1R4761	123	19	25	50	0.4	5.0	8.2	45	78	11.2
100 PPM	Q1R4763	133	21	36	65	0.4	4.6	7.6	51	128	10.8
100 PPM	Q1R4775	117	20	27	56	0.4	4.7	7.4	41	32	11.0
100 PPM	Q1R4779	128	19	24	38	0.4	4.8	7.5	101	45	11.1
100 PPM	Q1R4780	115	19	30	56	0.4	5.0	7.0	151	45	10.8
100 PPM	Q1R4782	123	21	30	54	0.4	3.8	6.4	132	119	10.2
100 PPM	Q1R4783	111	18	46	74	0.4	4.1	6.7	120	51	10.4
100 PPM	Q1R4785	128	21	25	50	0.3	4.1	6.8	71	70	10.5
100 PPM	Q1R4787	120	19	39	54	0.4	4.2	7.4	144	64	10.9
100 PPM	Q1R4788	198	21	318	492	1.0	4.6	7.3	73	249	10.9
100 PPM	Q1R4793	129	18	64	124	0.7	4.3	7.3	104	89	11.2
100 PPM	Q1R4806	121	26	37	68	0.4	4.2	7.5	141	61	11.2
100 PPM	Q1R4816	119	21	26	51	0.5	5.0	7.8	70	40	11.6

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=12

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	R1R4822	120	17	28	46	0.4	4.5	6.9	86	57	11.2
30 PPM	R1R4824	138	18	23	50	0.5	4.6	7.4	60	36	11.0
30 PPM	R1R4838	112	19	54	68	0.6	4.5	7.7	102	51	10.8
30 PPM	R1R4839	127	23	30	68	0.4	4.3	6.9	104	46	10.7
30 PPM	R1R4840	135	18	38	70	0.5	4.5	7.6	134	42	10.8
30 PPM	R1R4842	132	20	46	87	0.5	4.5	7.2	145	63	10.9
30 PPM	R1R4848	113	20	34	62	0.5	4.4	7.5	121	51	11.1
30 PPM	R1R4849	131	17	28	48	0.4	4.1	6.9	49	24	10.7
30 PPM	R1R4850	151	18	35	73	0.6	4.2	7.4	110	84	10.9
30 PPM	R1R4852	124	20	26	55	0.7	4.3	7.5	88	42	10.8
30 PPM	R1R4855	120	17	39	86	0.4	4.4	7.3	92	32	11.2
30 PPM	R1R4857	132	20	20	42	0.4	4.3	7.1	91	41	10.8
30 PPM	R1R4862	131	19	33	74	0.4	4.4	7.4	44	55	11.0
30 PPM	R1R4868	122	13	22	47	0.3	4.4	7.5	13	29	10.4
30 PPM	R1R4870	146	18	24	50	0.5	4.4	6.8	131	56	10.6
10 PPM	S1R4874	139	17	62	86	0.7	4.1	7.0	83	36	10.8
10 PPM	S1R4885	140	24	25	57	0.5	4.4	7.6	91	34	11.2
10 PPM	S1R4886	114	21	24	43	0.9	4.0	7.1	59	35	11.1
10 PPM	S1R4894	132	20	26	48	1.2	4.5	7.8	78	32	11.1
10 PPM	S1R4897	141	17	37	58	0.4	4.0	6.7	48	56	10.3
10 PPM	S1R4899	137	21	31	48	0.5	4.3	7.2	63	32	10.7
10 PPM	S1R4902	142	17	26	52	0.6	4.2	7.0	66	43	10.7
10 PPM	S1R4903	121	20	78	125	0.4	4.5	7.6	76	42	11.0
10 PPM	S1R4907	140	17	36	62	0.5	4.1	6.7	87	40	10.6
10 PPM	S1R4909	131	15	37	62	0.6	4.2	7.1	47	33	11.1
10 PPM	S1R4912	133	23	28	63	0.5	4.6	7.3	49	49	11.1
10 PPM	S1R4916	145	16	50	78	0.5	4.3	7.0	102	38	10.7
10 PPM	S1R4917	143	20	24	42	0.7	4.2	7.3	83	29	11.0
10 PPM	S1R4918	138	19	42	77	0.6	4.4	7.3	123	29	11.0
10 PPM	S1R4920	139	16	26	67	0.4	3.6	6.6	34	32	10.6

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=18

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	N1R4581	128	22	37	50	0.3	3.3	6.4	88	33	11.8
0 PPM	N1R4583	120	17	40	64	0.8	3.9	8.4	51	39	11.7
0 PPM	N1R4586	98	19	59	93	0.3	3.7	7.8	152	27	11.3
0 PPM	N1R4592	107	23	35	53	0.6	4.2	8.4	91	42	11.7
0 PPM	N1R4595	116	18	71	132	0.4	4.0	8.6	63	37	11.5
0 PPM	N1R4598	123	17	55	79	0.5	4.0	7.8	40	32	11.7
0 PPM	N1R4599	133	16	69	106	0.5	4.0	7.7	53	47	11.3
0 PPM	N1R4602	103	21	43	58	0.8	4.0	8.2	55	37	12.1
0 PPM	N1R4604	150	14	38	44	0.5	3.8	7.4	62	27	11.0
0 PPM	N1R4606	126	18	58	79	0.7	3.8	7.8	88	27	11.6
0 PPM	N1R4609	110	15	48	65	1.0	4.2	8.6	56	33	11.3
0 PPM	N1R4611	143	19	40	49	0.6	4.0	7.5	17	36	11.2
0 PPM	N1R4612	138	18	42	49	1.2	3.8	7.9	60	66	10.0
0 PPM	N1R4627	116	16	42	65	0.6	3.7	7.8	27	41	12.2
0 PPM	N1R4638	141	18	54	65	0.9	4.0	8.3	79	35	11.0
100 PPM	Q1R4762	110	17	107	185	0.7	3.3	8.4	65	5	12.1
100 PPM	Q1R4765	136	22	41	65	0.5	4.3	8.0	99	19	12.1
100 PPM	Q1R4772	118	21	46	73	0.6	4.4	8.2	93	33	11.6
100 PPM	Q1R4776	136	19	23	49	0.5	4.7	8.7	35	19	12.3
100 PPM	Q1R4778	163	15	35	57	0.6	4.2	8.1	47	20	11.4
100 PPM	Q1R4789	124	21	34	50	0.6	4.6	9.0	57	13	11.8
100 PPM	Q1R4794	139	21	28	48	0.5	4.4	8.1	54	21	11.8
100 PPM	Q1R4A01	139	21	58	80	0.5	4.1	7.6	66	31	11.5
100 PPM	Q1R4A03	138	20	46	67	0.5	4.5	8.8	63	29	12.6
100 PPM	Q1R4A07	108	17	32	62	0.3	3.7	6.7	72	18	12.6
100 PPM	Q1R4A08	130	22	82	136	0.5	4.3	8.8	54	73	12.2
100 PPM	Q1R4A11	116	20	28	50	0.4	4.1	8.3	38	22	11.9
100 PPM	Q1R4A13	123	23	89	112	0.3	4.0	7.9	87	25	11.4
100 PPM	Q1R4A14	110	23	28	48	0.5	4.4	8.8	80	45	12.5
100 PPM	Q1R4A17	123	22	50	63	0.5	3.8	7.6	96	22	12.0

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TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=18

DOSE	ANIMAL	GLU	BUN	ALT	AST	THILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	R1R4A24	132	23	42	42	0.8	3.9	8.4	21	6	10.0
30 PPM	R1R4A25	112	21	45	72	0.5	3.9	9.1	33	32	11.1
30 PPM	R1R4A32	148	16	51	62	0.7	3.9	9.1	30	85	10.2
30 PPM	R1R4A36	135	16	53	75	0.3	3.7	8.0	21	32	11.4
30 PPM	R1R4A39	138	20	27	55	0.4	3.7	7.5	60	26	10.8
30 PPM	R1R4A44	120	16	44	65	0.4	4.0	8.7	44	22	11.6
30 PPM	R1R4A45	129	16	39	95	0.4	4.1	8.3	52	36	11.9
30 PPM	R1R4A46	103	17	28	72	0.5	3.9	8.2	31	26	11.7
30 PPM	R1R4A47	131	18	43	71	0.6	3.4	8.6	50	48	10.2
30 PPM	R1R4A49	124	18	29	47	0.3	3.6	7.8	26	22	11.3
30 PPM	R1R4A55	119	15	32	55	0.4	3.8	7.8	41	26	11.5
30 PPM	R1R4861	132	20	44	57	0.5	3.3	7.0	34	15	9.0
30 PPM	R1R4A62	125	18	39	80	0.3	3.8	8.1	34	23	11.9
30 PPM	R1R4A63	149	25	74	105	1.0	3.9	9.6	50	36	8.8
30 PPM	R1R4864	134	20	39	70	0.5	3.7	7.9	30	31	11.4
10 PPM	S1R4A72	109	18	37	65	0.5	3.7	7.9	47	24	11.4
10 PPM	S1R4A73	180	20	28	56	0.4	3.6	7.7	60	26	11.1
10 PPM	S1R4A76	146	20	29	47	0.5	3.8	7.6	54	21	10.5
10 PPM	S1R4A78	132	15	26	48	0.5	3.8	7.8	25	36	11.2
10 PPM	S1R4A80	136	17	34	49	0.5	3.8	8.0	28	22	11.2
10 PPM	S1R4A92	148	18	48	78	0.5	3.7	8.2	66	35	11.3
10 PPM	S1R4A93	120	11	33	74	0.4	3.6	7.4	26	20	11.0
10 PPM	S1R4903	128	21	40	61	0.7	3.7	8.2	39	30	10.6
10 PPM	S1R4904	130	17	28	55	0.5	3.8	7.6	74	27	11.5
10 PPM	S1R4907	127	18	36	55	0.6	3.9	8.2	62	29	10.9
10 PPM	S1R4909	120	12	27	59	0.4	3.5	7.4	25	161	11.3
10 PPM	S1R4910	116	14	28	53	0.5	3.8	8.1	18	32	11.4
10 PPM	S1R4915	117	16	50	81	0.6	3.7	8.8	34	27	9.6
10 PPM	S1R4916	145	11	29	48	0.2	3.4	6.8	33	30	10.9
10 PPM	S1R4919	143	14	36	51	0.5	3.7	7.4	37	30	11.5

C01522

TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=24

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
0 PPM	N1R4583	135	17	36	52	1.0	3.3	8.1	49	76	12.4
0 PPM	N1R4586	121	18	52	88	0.3	3.4	7.3	149	45	11.2
0 PPM	N1R4591	118	20	32	58	1.2	3.5	7.8	127	109	12.4
0 PPM	N1R4595	123	17	66	158	0.5	3.6	8.5	53	57	12.0
0 PPM	N1R4598	140	16	37	52	0.4	3.4	7.2	38	34	11.5
0 PPM	N1R4603	138	26	34	56	0.4	3.4	7.2	35	59	11.0
0 PPM	N1R4606	120	17	36	52	0.7	3.3	7.9	78	119	11.4
0 PPM	N1R4611	148	21	42	81	0.5	3.2	6.5	70	50	11.3
0 PPM	N1R4614	115	17	37	42	0.6	3.7	7.6	76	36	11.3
0 PPM	N1R4616	118	16	42	73	0.4	3.3	7.5	46	80	11.0
0 PPM	N1R4626	112	10	27	52	0.2	3.7	8.6	39	52	11.1
0 PPM	N1R4628	107	15	36	48	0.4	3.2	7.5	39	75	11.0
0 PPM	N1R4634	97	26	42	98	0.2	2.9	6.1	87	35	10.5
0 PPM	N1R4636	130	15	29	42	0.6	3.4	7.5	61	58	11.6
0 PPM	N1R4638	111	17	52	65	1.1	3.5	8.4	84	141	12.8
100 PPM	Q1R4759	109	16	41	75	0.2	3.3	6.6	94	35	10.8
100 PPM	Q1R4764	97	13	41	57	0.2	3.2	7.6	117	66	10.2
100 PPM	Q1R4767	99	15	30	52	0.3	3.6	7.8	71	53	11.8
100 PPM	Q1R4769	120	14	30	44	0.3	3.2	7.3	42	34	10.8
100 PPM	Q1R4773	121	18	52	79	0.4	3.5	7.4	83	64	10.8
100 PPM	Q1R4778	128	12	38	60	0.2	3.4	7.8	68	45	11.0
100 PPM	Q1R4794	110	15	37	46	0.4	4.2	8.2	73	32	11.3
100 PPM	Q1R4796	123	19	32	48	0.2	3.6	7.3	80	63	11.1
100 PPM	Q1R4800	102	20	52	84	0.3	3.8	8.1	188	39	11.8
100 PPM	Q1R4803	114	16	40	55	0.3	4.0	8.1	82	72	11.9
100 PPM	Q1R4809	114	19	45	71	0.6	3.2	6.8	97	36	11.2
100 PPM	Q1R4811	118	15	33	39	0.3	3.6	7.6	52	56	11.9
100 PPM	Q1R4814	111	24	35	42	0.5	3.3	7.9	112	67	11.4
100 PPM	Q1R4817	110	17	41	73	0.2	2.9	8.1	148	98	11.4
100 PPM	Q1R4819	107	12	60	135	0.6	3.2	7.4	161	76	12.4

G01578

TABLE 15

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
INDIVIDUAL PLASMA CHEMISTRY VALUES

MONTH=24

DOSE	ANIMAL	GLU	BUN	ALT	AST	TBILI	ALB	TPROT	ALKPHOS	CPK	CA
30 PPM	R1R4822	115	27	25	22	0.2	3.4	6.3	39	87	11.3
30 PPM	R1R4826	103	14	29	55	0.3	3.2	7.6	85	71	10.8
30 PPM	R1R4827	121	18	42	66	0.4	3.4	7.8	42	70	11.1
30 PPM	R1R4832	127	15	38	64	0.5	3.5	8.2	59	118	11.5
30 PPM	R1R4834	138	16	22	49	0.6	3.3	7.3	63	87	10.9
30 PPM	R1R4836	119	18	33	62	0.4	3.0	6.0	26	101	10.5
30 PPM	R1R4839	115	18	25	55	0.4	3.6	7.9	88	51	11.0
30 PPM	R1R4844	98	18	31	70	0.3	3.4	8.4	64	73	10.7
30 PPM	R1R4847	105	15	25	120	0.6	2.5	6.7	81	157	9.6
30 PPM	R1R4851	57	90	146	1960	0.5	2.2	5.5	511	223	10.6
30 PPM	R1R4854	113	19	34	109	0.3	3.4	8.5	78	159	11.2
30 PPM	R1R4858	127	17	26	68	0.4	3.9	8.0	71	195	11.9
30 PPM	R1R4859	125	14	20	56	0.2	2.9	7.6	45	68	10.8
30 PPM	R1R4864	117	15	21	105	0.5	3.4	7.5	30	382	10.8
30 PPM	R1R4869	117	14	20	62	0.3	3.4	6.9	43	41	12.2
10 PPM	S1R4872	112	19	25	57	0.5	3.5	7.7	100	82	10.5
10 PPM	S1R4873	136	20	26	51	0.6	3.4	7.5	82	94	11.6
10 PPM	S1R4876	128	17	21	47	0.3	3.2	6.4	58	76	10.4
10 PPM	S1R4881	141	17	30	50	0.6	3.6	7.8	34	151	11.1
10 PPM	S1R4882	139	21	29	76	1.7	3.3	8.1	71	175	12.3
10 PPM	S1R4884	116	26	17	53	0.2	2.8	6.0	38	129	10.7
10 PPM	S1R4885	132	20	25	52	1.5	3.4	8.8	68	169	13.3
10 PPM	S1R4892	141	16	26	63	0.3	3.4	7.1	98	76	10.6
10 PPM	S1R4894	138	20	40	60	2.8	3.8	9.4	65	83	13.6
10 PPM	S1R4897	110	9	14	49	0.4	3.6	7.2	21	42	11.6
10 PPM	S1R4903	93	10	14	56	0.7	3.9	8.4	7	99	11.8
10 PPM	S1R4914	126	16	27	48	0.6	3.4	7.3	70	101	11.1
10 PPM	S1R4916	133	16	31	66	0.3	2.9	6.2	52	66	11.2
10 PPM	S1R4918	118	15	18	132	0.3	3.3	7.1	42	39	11.6
10 PPM	S1R4919	109	10	42	57	0.6	3.6	7.4	44	134	12.2

CO1579

Table 16

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
0281CR0012

Urinalysis Values

Dose Group	Specific Gravity	pH	Albumin	Bilirubin	Glucose	Occult Blood	Ketones
3 Mo. Male							
Control	1.025-1.062	7-9	N-Tr	N-N	N-N	N-4+	N-N
100 PPM	1.033-1.060	6-7	N-2+	N-N	N-N	N-2+	N-N
30 PPM	1.012-1.058	6-7	N-1+	N-N	N-N	N-N	N-N
10 PPM	1.027-1.056	7-8	N-N	N-N	N-N	N-1+	N-N
3 Mo. Female							
Control	1.011-1.052	7-8	N-1+	N-N	N-N	N-N	N-N
100 PPM	1.009-1.064	7-8	N-Tr	N-N	N-N	N-N	N-N
30 PPM	1.028-1.064	7-8	N-Tr	N-N	N-N	N-N	N-N
10 PPM	1.023-1.070	6-8	N-1+	N-N	N-N	N-N	N-N
6 Mo. Male							
Control	1.021-1.066	6-8	N-3+	N-N	N-N	N-3+	N-N
100 PPM	1.028-1.068	6-8	N-2+	N-N	N-N	N-3+	N-1+
30 PPM	1.030-1.058	6-8	N-4+	N-N	N-N	N-N	N-1+
10 PPM	1.030-1.064	6-8	N-3+	N-N	N-N	N-N	N-N
6 Mo. Female							
Control	1.028-1.072	6-7	N-3+	N-N	N-N	N-1+	N-1+
100 PPM	1.016-1.053	6-8	N-N	N-N	N-N	N-N	N-N
30 PPM	1.022-1.046	6-8	N-Tr	N-N	N-N	N-N	N-N
10 PPM	1.020-1.058	6-8	N-1+	N-N	N-N	N-N	N-N

Code: N - negative; Tr - trace; 1+ - slight; 2+ - slight to moderate; 3+ - moderate to marked; 4+ - marked

C01580

Table 16 (continued)

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 In Rats
0281CR0012

Urinalysis Values

Dose Group	Specific Gravity	pH	Albumin	Bilirubin	Glucose	Occult Blood	Ketones
12 Mo. Male							
Control	1.040-1.093	7.0-8.5	N-4+	N-N	N-N	N-3+	N-Tr
100 PPM	1.020-1.056	7.0-7.5	N-2+	N-N	N-N	N-N	N-Tr
30 PPM	1.034-1.060	7.0-8.0	N-2+	N-N	N-N	N-Tr	N-Tr
10 PPM	1.026-1.058	7.0-8.0	N-2+	N-N	N-N	N-3+	N-Tr
12 Mo. Female							
Control	1.023-1.070	6.5-7.5	N-3+	N-N	N-N	N-N	N-N
100 PPM	1.017-1.062	6.5-8.0	N-4+	N-N	N-N	N-N	N-N
30 PPM	1.020-1.044	7.0-8.5	N-4+	N-N	N-N	N-N	N-N
10 PPM	1.015-1.071	6.5-8.0	N-4+	N-N	N-N	N-2+	N-N
18 Mo. Male							
Control	1.016-1.064	6.5-8.0	N-3+	N-N	N-N	N-2+	N-N
100 PPM	1.044-1.088	6.5-7.5	N-4+	N-N	N-N	N-Tr	N-N
30 PPM	1.030-1.090	6.5-8.0	N-4+	N-N	N-N	N-1+	N-N
10 PPM	1.008-1.075	6.5-8.0	N-4+	N-N	N-N	N-2+	N-N
18 Mo. Female							
Control	1.016-1.058	7.0-7.5	N-3+	N-N	N-N	N-Tr	N-N
100 PPM	1.017-1.056	6.5-8.5	N-1+	N-N	N-N	N-N	N-N
30 PPM	1.018-1.058	6.0-8.0	N-4+	N-N	N-N	N-N	N-N
10 PPM	1.016-1.056	6.0-8.0	N-3+	N-N	N-Tr	N-Tr	N-N

Code: N - negative; Tr - trace; 1+ - slight; 2+ - slight to moderate; 3+ - moderate to marked; 4+ - marked

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TABLE 16 (concluded)

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
0281CR0012

Urinalysis Values

Dose Group	Specific Gravity	pH	Albumin	Bilirubin	Glucose	Occult Blood	Ketones
24 Mo. Male							
Control	1.018-1.054	6.5-8.5	N-4+	N-N	N-N	N-4+	N-N
100 PPM	1.017-1.071	6.0-8.0	N-4+	N-N	N-N	N-4+	N-N
30 PPM	1.007-1.096	6.0-7.5	N-4+	N-Tr	N-N	N-4+	N-N
10 PPM	1.019-1.080	6.0-8.5	N-4+	N-N	N-N	N-4+	N-Tr
24 Mo. Female							
Control	1.012-1.034	7.0-8.5	N-2+	N-N	N-N	N-N	N-N
100 PPM	1.011-1.033	6.5-8.0	N-2+	N-N	N-N	N-4+	N-N
30 PPM	1.008-1.034	5.0-8.0	N-4+	N-N	N-N	N-3+	N-N
10 PPM	1.010-1.037	6.5-8.0	N-3+	N-N	N-N	N-N	N-N

Code: N - negative; Tr - trace; 1+ - slight; 2+ - slight to moderate; 3+ - moderate to marked; 4+ - marked

C01582

TABLE 17

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS
ONE YEAR INTERIM

ABSOLUTE ORGAN WEIGHT (GRAMS)

	0 PPM		100 PPM	
MALE	N = 15		N = 15	
ORGAN	WT	SD	WT	SD
BODY	625.5	+-65.905	555.3	+-40.619*
LIVER	19.15	+- 3.212	26.11	+- 2.891*
HEART	1.629	+- 0.157	1.449	+- 0.138*
SPLEEN	0.894	+- 0.144	0.734	+- 0.112*
KIDNEYS	3.854	+- 0.507	3.888	+- 0.295
ADRENALS	.0679	+- 0.013	.0532	+- 0.006*
TESTES	3.553	+- 0.419	3.568	+- 0.409
BRAIN	2.113	+- 0.111	2.049	+- 0.059
PITUITARY	.0205	+- 0.006	.0105	+- 0.002*
FEMALE	N = 15		N = 15	
ORGAN	WT	SD	WT	SD
BODY	401.1	+-77.172	335.7	+-57.721*
LIVER	12.28	+- 1.904	17.72	+- 2.416*
HEART	1.117	+- 0.134	0.990	+- 0.113*
SPLEEN	0.663	+- 0.123	0.535	+- 0.103*
KIDNEYS	2.533	+- 0.383	2.715	+- 0.275
ADRENALS	.0761	+- 0.012	.0824	+- 0.006
UTERUS	0.775	+- 0.247	0.861	+- 0.185
BRAIN	1.963	+- 0.128	1.954	+- 0.093
PITUITARY	.0227	+- 0.006	.0215	+- 0.007

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

001583

TABLE 17

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS
ONE YEAR INTERIM

ORGAN WEIGHT/BODY WEIGHT (%)

	0 PPM		100 PPM	
MALE	N = 15		N = 15	
ORGAN	%	SD	%	SD
LIVER	3.053	+-0.318	4.732	+-0.664*
HEART	0.262	+-0.021	0.261	+-0.022
SPLEEN	0.144	+-0.025	0.132	+-0.019
KIDNEYS	0.617	+-0.057	0.702	+-0.057*
ADRENALS	0.011	+-0.002	0.010	+-0.001
TESTES	0.570	+-0.057	0.646	+-0.084*
BRAIN	0.340	+-0.026	0.371	+-0.032*
PITUITARY	0.003	+-0.001	0.002	+-0.000*
FEMALE	N = 15		N = 15	
ORGAN	%	SD	%	SD
LIVER	3.090	+-0.293	5.343	+-0.652*
HEART	0.284	+-0.038	0.299	+-0.032
SPLEEN	0.168	+-0.031	0.160	+-0.026
KIDNEYS	0.642	+-0.091	0.823	+-0.107*
ADRENALS	0.020	+-0.005	0.025	+-0.006*
UTERUS	0.201	+-0.077	0.265	+-0.073*
BRAIN	0.507	+-0.105	0.598	+-0.100*
PITUITARY	0.006	+-0.002	0.006	+-0.002

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

001584

TABLE 17

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS
ONE YEAR INTERIM

ORGAN WEIGHT/BRAIN WEIGHT (RATIO)

	0 PPM		100 PPM	
MALE	N = 15		N = 15	
ORGAN	RATIO	SD	RATIO	SD
LIVER	9.049	+-1.321	12.75	+-1.452*
HEART	0.772	+-0.071	0.707	+-0.067*
SPLEEN	0.424	+-0.070	0.359	+-0.056*
KIDNEYS	1.821	+-0.192	1.899	+-0.155
ADRENALS	0.032	+-0.006	0.026	+-0.004*
TESTES	1.678	+-0.150	1.743	+-0.213
PITUITARY	0.010	+-0.003	0.005	+-0.001*
FEMALE	N = 15		N = 15	
ORGAN	RATIO	SD	RATIO	SD
LIVER	6.273	+-1.001	9.074	+-1.208*
HEART	0.571	+-0.073	0.507	+-0.055*
SPLEEN	0.337	+-0.056	0.273	+-0.049*
KIDNEYS	1.294	+-0.197	1.389	+-0.122
ADRENALS	0.039	+-0.006	0.042	+-0.004
UTERUS	0.397	+-0.130	0.439	+-0.083
PITUITARY	0.012	+-0.004	0.011	+-0.004

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.

001585

TABLE 17

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
ONE YEAR INTERIM INDIVIDUAL ORGAN WEIGHTS

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS[a]	TESTES	BRAIN	PITUITARY[a]
0 PPM	A1R-3516	720	23.88	1.786	1.079	3.970	94	3.727	2.330	9
0 PPM	A1R-3517	651	21.74	1.565	0.874	4.043	66	4.147	2.111	18
0 PPM	A1R-3520	655	20.87	1.719	0.772	4.352	62	3.967	2.204	19
0 PPM	A1R-3522	627	16.18	1.675	0.776	4.281	67	3.794	2.227	20
0 PPM	A1R-3527	634	16.71	1.517	0.658	3.356	57	3.316	2.088	33
0 PPM	A1R-3535	594	18.12	1.654	0.895	3.474	87	3.238	1.953	27
0 PPM	A1R-3543	747	24.96	1.783	0.904	4.365	59	3.704	2.194	15
0 PPM	A1R-3546	656	17.61	2.018	0.905	3.958	77	3.460	2.079	26
0 PPM	A1R-3550	566	15.19	1.476	0.704	3.656	41	3.911	2.150	15
0 PPM	A1R-3551	494	13.96	1.361	0.751	2.657	59	2.581	1.920	24
0 PPM	A1R-3559	627	19.53	1.536	0.872	3.548	78	3.331	2.074	23
0 PPM	A1R-3568	688	22.31	1.629	1.091	4.679	64	3.870	2.207	14
0 PPM	A1R-3570	575	16.55	1.526	0.991	3.525	64	3.503	2.114	25
0 PPM	A1R-3575	551	19.88	1.636	1.113	3.781	67	2.944	1.971	15
0 PPM	A1R-3580	598	19.77	1.556	1.028	4.170	76	3.805	2.071	15
100 PPM	B1R-3696	566	29.34	1.516	0.795	3.484	52	3.367	2.042	12
100 PPM	B1R-3699	521	26.43	1.318	0.633	3.664	48	3.375	2.194	9
100 PPM	B1R-3711	541	27.51	1.431	0.779	3.856	49	3.609	1.991	7
100 PPM	B1R-3714	515	30.80	1.491	0.747	3.996	51	3.720	2.060	10
100 PPM	B1R-3715	625	21.89	1.498	0.845	3.954	61	3.144	2.026	10
100 PPM	B1R-3720	530	23.88	1.360	0.575	3.823	50	3.762	1.999	8
100 PPM	B1R-3721	575	23.24	1.825	0.743	4.384	52	3.450	2.083	13
100 PPM	B1R-3722	598	25.17	1.428	0.704	4.313	56	3.415	2.022	14
100 PPM	B1R-3727	610	26.06	1.518	0.715	3.869	51	4.661	2.044	12
100 PPM	B1R-3732	467	22.51	1.307	0.615	3.688	50	3.402	2.041	11
100 PPM	B1R-3733	561	25.53	1.549	0.502	3.469	51	3.045	2.025	9
100 PPM	B1R-3736	543	29.48	1.269	0.815	3.603	73	3.984	1.951	10
100 PPM	B1R-3737	557	30.27	1.350	0.781	3.947	48	3.780	2.054	12
100 PPM	B1R-3747	535	26.38	1.360	0.872	3.872	51	3.727	2.131	12
100 PPM	B1R-3748	585	23.18	1.512	0.893	4.394	55	3.076	2.027	9

NOTES: BODY WEIGHTS AND ORGAN WEIGHTS ARE IN G.

[a] INDICATES ADRENAL AND PITUITARY WEIGHTS IN MG.

001586

TABLE 17

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
ONE YEAR INTERIM INDIVIDUAL ORGAN WEIGHTS

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS[a]	UTERUS	BRAIN	PITUITARY[a]
0 PPM	N1R-4578	540	15.34	1.390	0.751	3.279	80	0.696	2.044	22
0 PPM	N1R-45A2	385	12.26	1.185	0.418	2.405	81	0.870	1.674	27
0 PPM	N1R-45A5	353	12.90	1.035	0.626	2.223	56	0.674	1.912	18
0 PPM	N1R-45A8	386	11.99	1.117	0.679	2.535	87	0.654	2.073	18
0 PPM	N1R-45B9	375	13.19	1.095	0.651	3.106	78	1.032	1.963	25
0 PPM	N1R-4590	373	10.52	1.037	0.571	2.308	78	0.833	1.875	17
0 PPM	N1R-4601	470	13.39	1.164	0.868	3.115	62	0.407	1.928	25
0 PPM	N1R-4608	429	13.00	1.021	0.648	2.356	85	0.963	2.124	19
0 PPM	N1R-4610	345	11.31	0.982	0.681	2.435	87	1.371	1.969	30
0 PPM	N1R-4620	320	11.45	1.176	0.789	2.470	89	0.846	2.135	18
0 PPM	N1R-4629	401	11.33	1.084	0.663	2.176	65	0.523	1.967	19
0 PPM	N1R-4630	466	13.83	1.280	0.725	2.616	80	0.520	2.154	17
0 PPM	N1R-4631	248	7.37	0.830	0.414	1.844	62	0.520	1.883	20
0 PPM	N1R-4632	531	14.70	1.128	0.723	2.620	59	0.890	1.846	40
0 PPM	N1R-4640	395	11.69	1.238	0.731	2.512	92	0.833	1.893	25
100 PPM	O1R-4757	377	19.34	1.140	0.623	3.013	76	0.700	1.980	20
100 PPM	O1R-4760	305	17.93	0.969	0.485	3.036	85	0.907	2.096	15
100 PPM	O1R-4761	326	16.93	0.991	0.507	2.561	84	0.964	1.975	21
100 PPM	O1R-4763	294	18.28	0.992	0.562	2.702	91	1.195	2.118	16
100 PPM	O1R-4775	368	20.84	1.138	0.452	2.870	78	0.672	1.844	26
100 PPM	O1R-4779	315	16.62	0.997	0.467	2.686	88	1.125	1.971	28
100 PPM	O1R-47A0	259	14.36	0.753	0.281	2.227	86	0.838	1.863	19
100 PPM	O1R-47A2	372	17.14	0.926	0.555	2.630	76	0.535	1.904	11
100 PPM	O1R-47A3	251	12.31	0.825	0.462	2.134	97	0.735	1.823	14
100 PPM	O1R-47A5	400	17.35	1.001	0.656	2.612	78	0.738	1.925	17
100 PPM	O1R-47B7	401	19.54	1.039	0.672	2.930	84	1.072	2.061	34
100 PPM	O1R-47BA	279	16.05	0.968	0.609	2.628	76	0.744	1.943	22
100 PPM	O1R-4793	433	19.08	1.099	0.648	2.843	75	0.838	1.958	32
100 PPM	O1R-4806	277	18.14	0.885	0.477	2.704	82	0.837	1.816	21
100 PPM	O1R-4816	378	21.96	1.134	0.572	3.087	80	1.030	1.979	24

NOTES: BODY WEIGHTS AND ORGAN WEIGHTS ARE IN G.

[a] INDICATES ADRENAL AND PITUITARY WEIGHTS IN MG.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS

ABSOLUTE ORGAN WEIGHT (GRAMS)

MALE	0 PPM N = 15		100 PPM N = 15		30 PPM N = 15		10 PPM N = 15	
ORGAN	WT	SD	WT	SD	WT	SD	WT	SD
BODY	666.7	+-99.761	582.2	+-80.935*	648.7	+-87.484	653.6	+-93.615
LIVER	18.15	+- 3.074	22.10	+- 3.362*	20.69	+- 2.246	18.30	+- 2.811
HEART	1.720	+- 0.285	1.695	+- 0.212	1.793	+- 0.185	1.794	+- 0.242
SPLEEN	1.217	+- 0.339	0.754	+- 0.182*	0.988	+- 0.126*	1.026	+- 0.273
KIDNEYS	4.405	+- 0.745	4.403	+- 0.443	4.519	+- 0.372	4.349	+- 0.385
ADRENALS	.0801	+- 0.018	.0805	+- 0.018A	.1026	+- 0.040	.0986	+- 0.033B
TESTES	3.478	+- 0.702	3.544	+- 0.530	3.401	+- 0.616	3.712	+- 0.590
BRAIN	2.105	+- 0.133	2.075	+- 0.093	2.141	+- 0.124	2.162	+- 0.101

FEMALE	N = 15		N = 15		N = 15		N = 15	
ORGAN	WT	SD	WT	SD	WT	SD	WT	SD
BODY	512.5	+-82.585	413.4	+-83.150*	451.9	+-69.577	504.9	+-128.23
LIVER	15.11	+- 3.752	20.18	+- 5.013*	16.59	+- 3.170	17.02	+- 5.964
HEART	1.366	+- 0.199	1.241	+- 0.195	1.229	+- 0.188	1.375	+- 0.282
SPLEEN	0.797	+- 0.140	0.731	+- 0.178	0.749	+- 0.208	0.776	+- 0.228
KIDNEYS	3.129	+- 0.287	3.193	+- 0.404	3.143	+- 0.337	3.093	+- 0.593B
ADRENALS	.1030	+- 0.046B	.1085	+- 0.036	.1193	+- 0.043	.1433	+- 0.052A
UTERUS	0.814	+- 0.290	1.002	+- 0.328	0.836	+- 0.271	0.860	+- 0.324B
BRAIN	2.034	+- 0.102	1.997	+- 0.119	1.938	+- 0.179	1.965	+- 0.134

* : P <= .05. TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05. TWO TAILED DUNNETT T ON RANKED DATA.
A : N = 13 ANIMALS.
B : N = 14 ANIMALS.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS

ORGAN WEIGHT/BODY WEIGHT (%)

	0 PPM		100 PPM		30 PPM		10 PPM	
MALE	N = 15		N = 15		N = 15		N = 15	
ORGAN	%	SD	%	SD	%	SD	%	SD
LIVER	2.733	+-0.339	3.836	+-0.595*	3.216	+-0.344*	2.812	+-0.301
HEART	0.261	+-0.037	0.297	+-0.058	0.280	+-0.042	0.278	+-0.041
SPLEEN	0.187	+-0.059	0.130	+-0.025*	0.154	+-0.034	0.156	+-0.033
KIDNEYS	0.666	+-0.101	0.774	+-0.166*	0.706	+-0.095	0.677	+-0.104
ADRENALS	0.012	+-0.003	0.014	+-0.003A	0.016	+-0.008	0.015	+-0.0048
TESTES	0.536	+-0.144	0.618	+-0.114	0.528	+-0.092	0.579	+-0.126
BRAIN	0.322	+-0.049	0.364	+-0.060	0.339	+-0.040	0.337	+-0.051
FEMALE	N = 15		N = 15		N = 15		N = 15	
ORGAN	%	SD	%	SD	%	SD	%	SD
LIVER	2.941	+-0.465	4.903	+-0.959*	3.679	+-0.523*	3.335	+-0.773
HEART	0.269	+-0.036	0.308	+-0.070	0.275	+-0.041	0.279	+-0.047
SPLEEN	0.158	+-0.033	0.178	+-0.028	0.167	+-0.047	0.154	+-0.023
KIDNEYS	0.621	+-0.080	0.793	+-0.152*	0.706	+-0.110	0.621	+-0.1118
ADRENALS	0.020	+-0.0088	0.027	+-0.010	0.029	+-0.011	0.030	+-0.012A*
UTERUS	0.161	+-0.055	0.253	+-0.105*	0.189	+-0.064	0.177	+-0.076B
BRAIN	0.408	+-0.077	0.499	+-0.095*	0.437	+-0.065	0.410	+-0.094

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
\# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.
A : N = 13 ANIMALS.
B : N = 14 ANIMALS.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY STUDY OF FLUOROCARBON FM-3924 IN RATS
ABSOLUTE AND RELATIVE MEAN ORGAN WEIGHTS

ORGAN WEIGHT/BRAIN WEIGHT (RATIO)

	0 PPM		100 PPM		30 PPM		10 PPM	
MALE	N = 15		N = 15		N = 15		N = 15	
ORGAN	RATIO	SD	RATIO	SD	RATIO	SD	RATIO	SD
LIVER	8.648+-1.587		10.65+-1.522*		9.686+-1.107		8.470+-1.253	
HEART	0.819+-0.103		0.818+-0.105		0.841+-0.109		0.832+-0.122	
SPLEEN	0.578+-0.165		0.364+-0.092*		0.460+-0.076*		0.475+-0.127*	
KIDNEYS	2.099+-0.377		2.127+-0.246		2.119+-0.242		2.017+-0.218	
ADRENALS	0.038+-0.010		0.039+-0.009A		0.048+-0.021		0.046+-0.017B	
TESTES	1.658+-0.336		1.714+-0.284		1.590+-0.283		1.721+-0.291	
FEMALE	N = 15		N = 15		N = 15		N = 15	
ORGAN	RATIO	SD	RATIO	SD	RATIO	SD	RATIO	SD
LIVER	7.456+-1.918		10.15+-2.755*		8.651+-2.060		8.582+-2.682	
HEART	0.673+-0.100		0.623+-0.100		0.635+-0.087		0.699+-0.125	
SPLEEN	0.394+-0.078		0.367+-0.091		0.386+-0.107		0.391+-0.098	
KIDNEYS	1.543+-0.166		1.599+-0.172		1.637+-0.252		1.569+-0.238B	
ADRENALS	0.050+-0.022B		0.054+-0.018		0.063+-0.026		0.073+-0.024A*	
UTERUS	0.404+-0.156		0.502+-0.161		0.435+-0.145		0.436+-0.154B	

* : P <= .05, TWO TAILED DUNNETT T ON RAW DATA.
# : P <= .05, TWO TAILED DUNNETT T ON RANKED DATA.
A : N = 13 ANIMALS.
B : N = 14 ANIMALS.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN MALE RATS
TWO YEAR INDIVIDUAL ORGAN WEIGHTS(G)

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS[a]	TESTES	BRAIN
0 PPM	A1R3518	556	15.12	1.623	1.318	3.913	60	4.523	2.158
0 PPM	A1R3524	638	23.45	1.511	1.415	4.845	57	3.919	2.046
0 PPM	A1R3528	812	19.67	1.784	1.111	4.924	87	4.082	2.076
0 PPM	A1R3531	733	17.52	1.871	0.870	3.862	75	3.574	2.127
0 PPM	A1R3533	765	18.07	1.575	0.991	4.128	100	2.996	2.040
0 PPM	A1R3538	788	21.72	2.251	1.893	4.535	94	3.774	2.193
0 PPM	A1R3542	733	17.60	1.556	0.728	4.233	54	1.434	2.200
0 PPM	A1R3548	706	18.44	1.867	1.148	4.670	73	3.526	2.329
0 PPM	A1R3554	517	14.19	1.547	1.135	3.467	88	3.628	1.990
0 PPM	A1R3557	612	17.71	1.786	1.106	4.718	70	4.123	2.252
0 PPM	A1R3562	588	15.14	1.616	1.754	3.948	61	3.475	2.061
0 PPM	A1R3564	576	16.20	1.679	1.396	3.745	93	3.328	2.223
0 PPM	A1R3569	696	21.44	2.172	1.586	6.410	100	3.203	2.086
0 PPM	A1R3573	759	22.41	1.625	0.907	5.011	113	3.561	1.961
0 PPM	A1R3578	521	13.52	1.538	0.900	3.641	77	3.015	1.850
100 PPM	A1R3700	643	23.31	1.921	0.829	4.280	62	4.054	2.149
100 PPM	A1R3702	663	22.90	1.637	1.184	4.415	69	4.300	2.036
100 PPM	A1R3706	624	24.82	1.701	0.867	4.985	132	3.309	2.106
100 PPM	A1R3709	576	22.29	1.820	0.876	4.561	94	4.199	2.014
100 PPM	A1R3713	625	21.25	1.998	0.794	5.046	.[b]	3.530	2.156
100 PPM	A1R3718	624	29.97	1.645	0.625	4.307	67	3.018	2.266
100 PPM	A1R3725	544	26.08	2.037	0.927	5.094	78	4.464	1.959
100 PPM	A1R3730	619	20.86	1.576	0.729	4.356	93	3.747	2.054
100 PPM	A1R3739	369	18.57	1.651	0.500	4.754	.[b]	2.860	1.919
100 PPM	A1R3741	568	20.23	1.455	0.789	4.327	76	3.397	2.106
100 PPM	A1R3746	660	19.33	1.629	0.548	4.026	75	3.698	2.036
100 PPM	A1R3752	437	15.43	1.361	0.681	3.555	76	3.514	2.128
100 PPM	A1R3755	587	22.70	1.975	0.637	4.350	78	2.727	2.162
100 PPM	A1R3758	602	22.01	1.590	0.731	3.804	72	3.284	1.953
100 PPM	A1R3760	592	21.70	1.629	0.792	4.149	75	3.098	2.058

[a] ADRENAL WEIGHTS ARE IN MG.
[b] ADRENAL WEIGHTS NOT TAKEN, ONE ADRENAL INVOLVED WITH A MASS.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-1924 IN MALE RATS
TWO YEAR INDIVIDUAL ORGAN WEIGHTS(G)

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS [a]	TESTES	BRAIN
30 PPM	C1R3761	623	19.69	1.788	0.684	4.463	74	3.652	2.040
30 PPM	C1R3763	642	21.54	1.818	1.034	4.414	110	2.690	2.094
30 PPM	C1R3767	786	21.03	1.875	0.958	4.907	84	3.896	2.044
30 PPM	C1R3769	728	24.05	1.711	1.046	4.622	88	3.100	2.150
30 PPM	C1R3773	568	20.74	1.976	1.279	4.637	79	1.488	1.978
30 PPM	C1R3776	551	21.37	2.032	1.055	5.250	210	2.550	1.889
30 PPM	C1R3779	634	19.29	1.646	0.947	4.390	178	3.783	2.130
30 PPM	C1R37A1	596	18.89	1.570	0.976	4.176	109	3.390	2.132
30 PPM	C1R37A6	698	20.26	1.680	0.913	4.408	89	4.396	2.152
30 PPM	C1R37A8	601	19.07	1.650	1.025	3.978	70	3.988	2.112
30 PPM	C1R3791	712	23.83	1.693	1.003	4.596	80	2.768	2.233
30 PPM	C1R3794	803	25.03	2.279	0.826	5.031	97	3.919	2.304
30 PPM	C1R3799	700	20.44	1.787	1.002	4.797	68	3.328	2.338
30 PPM	C1R3803	501	18.07	1.641	0.952	4.098	108	2.241	2.138
30 PPM	C1R3807	608	17.03	1.753	0.949	4.017	95	3.828	2.147
10 PPM	D1R3811	783	24.67	2.170	1.521	4.535	88	3.489	2.308
10 PPM	D1R3814	607	16.66	1.682	0.957	3.814	121	3.739	2.284
10 PPM	D1R3817	682	18.02	1.720	0.835	3.935	122	3.382	2.096
10 PPM	D1R3822	758	16.28	1.344	1.273	3.656	86	3.692	2.176
10 PPM	D1R3826	612	16.88	1.673	1.413	4.288	70	4.854	2.053
10 PPM	D1R3829	578	17.09	1.579	0.681	4.798	108	3.435	2.050
10 PPM	D1R3832	757	20.30	2.070	1.093	4.684	84	4.326	2.228
10 PPM	D1R3837	696	21.18	1.784	1.258	4.450	77	4.079	2.111
10 PPM	D1R3841	571	16.17	2.013	1.034	4.623	73	3.735	2.188
10 PPM	D1R3845	568	18.09	1.706	0.809	4.090	74	3.666	2.159
10 PPM	D1R3848	825	21.18	2.220	1.292	5.056	198 [b]	3.886	2.027
10 PPM	D1R3851	679	21.12	1.663	0.916	4.449	- [b]	2.463	2.234
10 PPM	D1R3853	528	15.03	1.644	0.850	4.554	93	3.637	2.303
10 PPM	D1R3856	606	14.42	1.943	0.595	4.201	97	2.872	2.008
10 PPM	D1R3858	554	17.34	1.781	0.870	4.104	89	4.427	2.145

[a] ADRENAL WEIGHTS ARE IN MG.
[b] ADRENAL WEIGHTS NOT TAKEN, ONE ADRENAL INVOLVED WITH A MASS.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-3924 IN FEMALE RATS
TWO YEAR INDIVIDUAL ORGAN WEIGHTS(G)

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS[a]	UTERUS	BRAIN
0 PPM	N1R4583	494	15.99	1.174	1.032	3.368	98	0.863	2.035
0 PPM	N1R4586	480	11.86	1.215	0.983	2.824	63	1.065	2.064
0 PPM	N1R4591	516	14.21	1.322	0.749	3.161	84	0.884	1.960
0 PPM	N1R4595	455	11.98	1.415	0.740	2.769	108	0.729	2.049
0 PPM	N1R4598	471	13.45	1.538	0.981	3.466	.[b]	1.155	1.928
0 PPM	N1R4603	481	14.37	1.465	0.657	3.218	96	0.725	2.174
0 PPM	N1R4606	592	14.99	1.601	0.757	3.374	114	1.591	1.927
0 PPM	N1R4611	604	24.88	1.567	0.721	3.318	253	0.566	2.115
0 PPM	N1R4614	518	14.40	1.499	0.697	3.356	91	0.570	2.055
0 PPM	N1R4616	387	11.77	1.254	0.717	3.012	122	0.803	2.140
0 PPM	N1R4626	353	10.28	0.949	0.581	2.464	78	0.354	2.032
0 PPM	N1R4628	535	13.34	1.182	0.938	3.042	79	0.812	1.971
0 PPM	N1R4634	567	19.23	1.523	0.665	2.878	108	0.738	1.919
0 PPM	N1R4636	560	19.57	1.140	0.933	3.261	85	0.746	1.874
0 PPM	N1R4638	675	16.28	1.612	0.798	3.390	75	0.636	2.218
100 PPM	O1R4759	475	22.81	1.304	0.794	3.135	169	1.097	1.966
100 PPM	O1R4764	326	11.83	0.902	0.506	2.667	90	0.708	2.003
100 PPM	O1R4767	392	16.20	0.926	0.559	3.062	66	0.700	1.952
100 PPM	O1R4769	387	19.01	1.255	0.658	3.314	86	0.972	2.033
100 PPM	O1R4773	323	19.53	1.233	0.639	3.884	136	1.700	2.049
100 PPM	O1R477H	422	16.88	1.321	1.064	3.573	193	0.796	2.017
100 PPM	O1R4794	423	21.60	1.215	0.588	3.405	84	1.165	2.142
100 PPM	O1R4796	419	17.31	1.114	0.670	2.609	66	0.519	1.978
100 PPM	O1R4800	348	15.50	1.238	0.672	2.847	125	1.137	1.941
100 PPM	O1R4803	477	23.60	1.256	0.690	3.406	82	0.785	1.888
100 PPM	O1R4809	398	30.21	1.170	0.776	2.765	113	1.243	1.771
100 PPM	O1R4811	457	23.01	1.449	0.800	3.669	115	1.565	2.131
100 PPM	O1R4814	441	23.03	1.108	0.701	3.389	116	0.789	2.217
100 PPM	O1R4817	631	27.58	1.661	1.176	3.491	93	0.885	2.004
100 PPM	O1R4819	282	14.58	1.463	0.564	2.682	94	0.926	1.919

[a] ADRENAL WEIGHTS ARE IN MG.
[b] ADRENAL WEIGHT NOT TAKEN, ONE ADRENAL GREATLY ENLARGED.

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TABLE 18

TWO YEAR ORAL (DIET) TOXICITY-ONCOGENICITY
STUDY OF FLUOROCARBON FM-1924 IN FEMALE RATS
TWO YEAR INDIVIDUAL ORGAN WEIGHTS(G)

DOSE	ANIMAL	BODY	LIVER	HEART	SPLEEN	KIDNEYS	ADRENALS [a]	UTERUS	BRAIN
30 PPM	P1R4A23	413	20.60	1.074	0.465	3.134	209	0.500	1.478
30 PPM	P1R4A26	374	14.83	1.038	1.071	3.249	190	0.766	2.029
30 PPM	P1R4A27	397	14.56	1.131	0.593	2.596	84	1.151	2.008
30 PPM	P1R4A32	542	19.87	1.487	0.591	3.487	98	1.566	1.965
30 PPM	P1R4A34	473	20.53	1.219	0.632	2.931	92	0.674	2.057
30 PPM	P1R4A36	502	15.83	1.307	0.628	3.515	142	0.695	2.066
30 PPM	P1R4A39	466	14.74	1.625	0.749	2.798	96	0.596	2.205
30 PPM	P1R4A44	337	13.21	1.075	0.668	3.362	101	1.018	1.657
30 PPM	P1R4A49	403	12.48	0.865	0.568	2.734	120	0.836	1.851
30 PPM	P1R4A54	427	16.03	1.382	0.861	3.145	159	0.676	1.950
30 PPM	P1R4A55	600	21.58	1.219	0.981	3.535	158	0.794	1.619
30 PPM	P1R4A58	443	16.14	1.216	0.748	2.680	68	0.767	1.821
30 PPM	P1R4A59	401	11.59	1.311	0.609	3.011	98	0.922	1.935
30 PPM	P1R4A64	487	17.44	1.176	0.827	3.314	99	0.568	2.125
30 PPM	P1R4A69	514	19.35	1.307	1.210	3.613	76	1.018	2.111
10 PPM	Q1R4A72	358	13.67	1.239	0.555	2.849	100	1.220	1.899
10 PPM	Q1R4A73	512	13.96	1.505	0.655	2.515	96	0.517	1.861
10 PPM	Q1R4A76	412	13.84	1.080	0.668	2.542	119	0.531	1.668
10 PPM	Q1R4A81	543	20.96	1.259	0.614	3.000	85	1.440	2.008
10 PPM	Q1R4A82	646	19.65	1.446	0.994	3.326	181	0.475	2.046
10 PPM	Q1R4A84	405	21.66	1.056	0.779	. [b]	220	. [b]	1.987
10 PPM	Q1R4A85	550	17.46	1.579	0.737	3.513	119	0.841	1.849
10 PPM	Q1R4A92	740	29.22	2.161	1.266	4.017	193	0.980	2.113
10 PPM	Q1R4A94	451	14.17	1.178	0.820	2.883	207	0.998	1.995
10 PPM	Q1R4A97	489	13.46	1.318	0.826	3.344	198	0.689	2.047
10 PPM	Q1R4903	378	11.21	1.392	0.507	2.512	154	0.536	1.866
10 PPM	Q1R4914	645	20.68	1.480	0.887	3.681	125	1.389	2.094
10 PPM	Q1R4916	672	25.26	1.569	1.047	3.064	. [c]	0.673	2.121
10 PPM	Q1R4918	296	5.51	1.069	0.349	2.036	66	0.737	1.842
10 PPM	Q1R4919	476	14.58	1.336	0.831	4.025	. [c]	1.018	2.098

[a] ADRENAL WEIGHTS ARE IN MG.
[b] KIDNEY AND UTERUS WEIGHTS NOT TAKEN DUE TO CONGENITAL ABNORMALITY.
[c] ADRENAL WEIGHTS NOT TAKEN DUE TO INVOLVEMENT WITH MASS.

C01594

TABLE 19

Two Year Oral (Diet) Toxicity - Oncogenicity Study of Fluorochemical FM-3924 in Rats

Summary of Major Microscopic Findings - Percent Incidence at Two Years

NEOPLASTIC LESIONS[a]

Organ/Findings	Controls		High		Mid		Low	
	Male 50[b]	Female 50	Male 50	Female 50	Male 50	Female 50	Male 50	Female 50
ADRENAL								
Pheochromocytoma, Benign	4	4	0	2	8	0	8	2
Pheochromocytoma, Malignant	0	0	0	0	0	2	2	0
LIVER								
Hepatocellular Carcinoma	6	0	4	6	2	0	2	0
Hepatocellular Adenoma	0	0	0	8	0	0	0	0
MAMMARY GLAND								
Adenocarcinoma	-	15	-	21	-	24	-	13
Adenoma	-	7	-	0	-	0	-	0
Carcinoma	-	2	-	0	-	0	-	0
Fibroadenoma	-	22	-	13	-	33	-	36
PITUITARY								
Adenoma	35	72	43	71	60	82	47	76
THYROID								
C-cell Adenoma	0	2	2	2	4	3	7	2
C-cell Carcinoma	5	0	2	4	2	3	0	2
UTERUS								
Polyp	-	2	-	2	-	9	-	8

[a] - No statistically significant differences ($\alpha = 0.05$) were found between rats fed diets with FM-3924 and control group animals.

[b] - 50 rats/sex/group were at risk; % values derived from actual tissues examined.

TABLE 20

Two Year Oral (Diet) Toxicity - Oncogenicity Study of Fluorochemical FM-3924 in Rats

Summary of Major Microscopic Findings - Percent Incidence at Two Years

NON-NEOPLASTIC LESIONS

	Controls		High		Mid		Low	
Organ/Findings	Male 50[a]	Female 50	Male 50	Female 50	Male 50	Female 50	Male 50	Female 50
ADRENAL								
Nodular Hyperplasia	4	0	22*	2	0	4	10	0
Sinusoidal Ectasia	22	84	30	68	40	78	10	72
Cortical Vacuolation	48	10	36	22	30	14	20*	10
HEART								
Myocardial Fibrosis	10	4	10	2	12	10	20	6
Myocarditis, Chronic	28	32	30	4*	50	14	40	18
KIDNEY								
Nephropathy, Chronic	88	60	86	36	80	52	88	44
Pelvic Mineralization	8	60	0	66	16	48	16	46
LIVER								
Cystoid Degeneration	8	0	30*	8	16	0	12	0
Hepatocellular Alt.Vac.	20	26	18	12	32	12	24	12
Hepatocellular Vac.	44	60	78*	82	38	50	24	54
Hyperplastic Nodule	0	2	10	18*	2	0	0	0
Megalocytosis	0	0	84*	88*	56*	2	54*	0
Necrosis	6	10	20	8	0	12	4	10
LUNG								
Alveolar Macrophages	20	28	46*	54*	30	30	36	28
Perivas, Mono.Infil.	42	26	14*	38	40	20	30	18
Vascular Mineralization	86	44	96	78*	88	84*	90	80*
Pneumonia, Interstitial	32	14	12	18	14	12	8*	20
TESTIS/EPIDIDYMIS								
Polyarteritis	12	-	4	-	4	-	8	-
Vascular Mineralization	0	-	12	-	4	-	14*	-
OVARY								
Tubular Hyperplasia	-	0	-	31*	-	23*	-	13*
THYROID								
C-cell Hyperplasia	2	0	9	9	6	11	4	0
URINARY BLADDER								
Epithelial Hyperplasia	7	14	4	4	13	5	2	0*
UTERUS								
Cystic Glands	-	14	-	29	-	13	-	17

[a] = 50 rats/sex/group were at risk; % values derived from actual tissues examined.

* = Statistically significant difference ($\alpha = 0.05$) from controls.

Figure 1

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
Mean Body Weights (g) Males

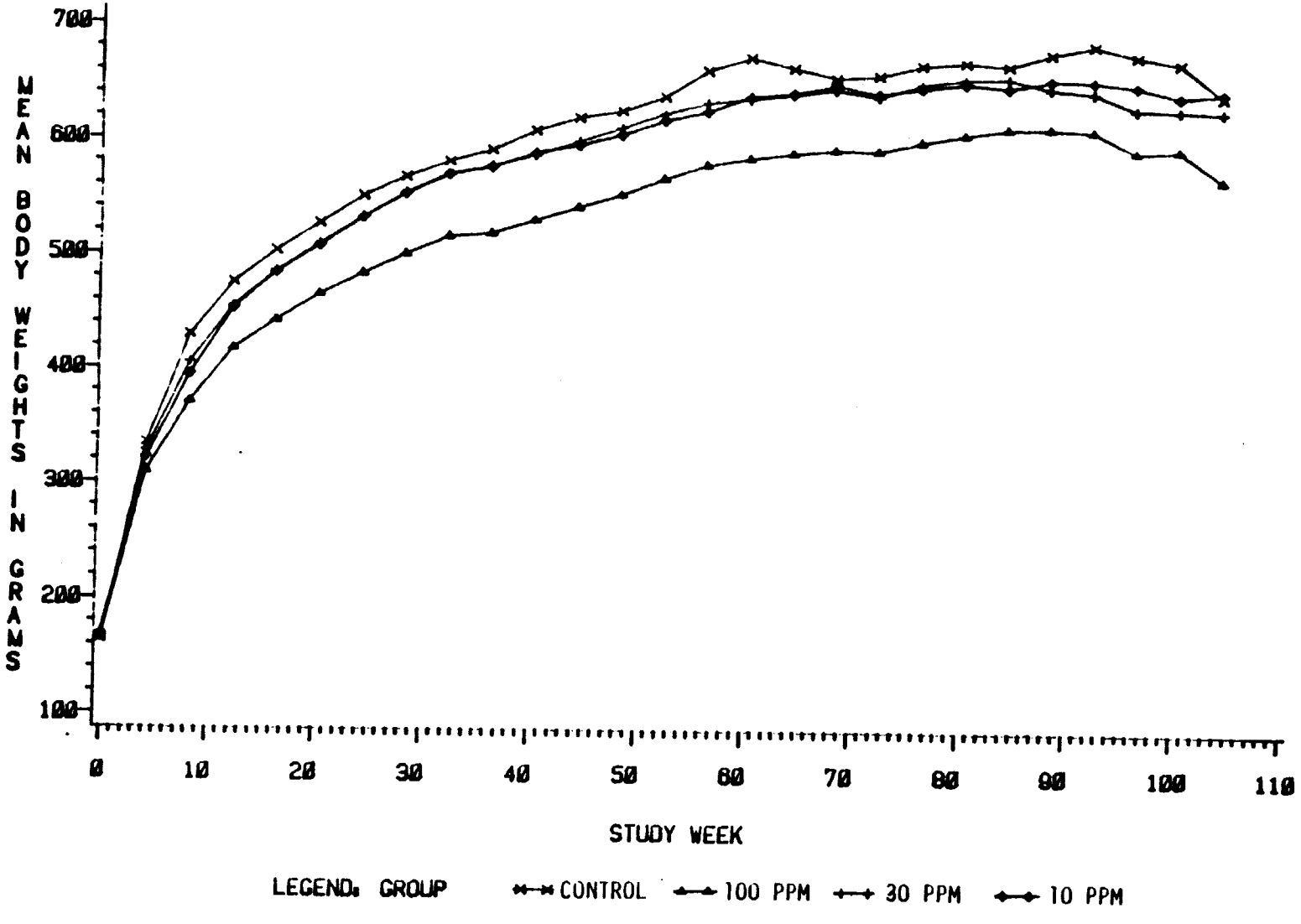

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Figure 2

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
Mean Body Weights (g) Females

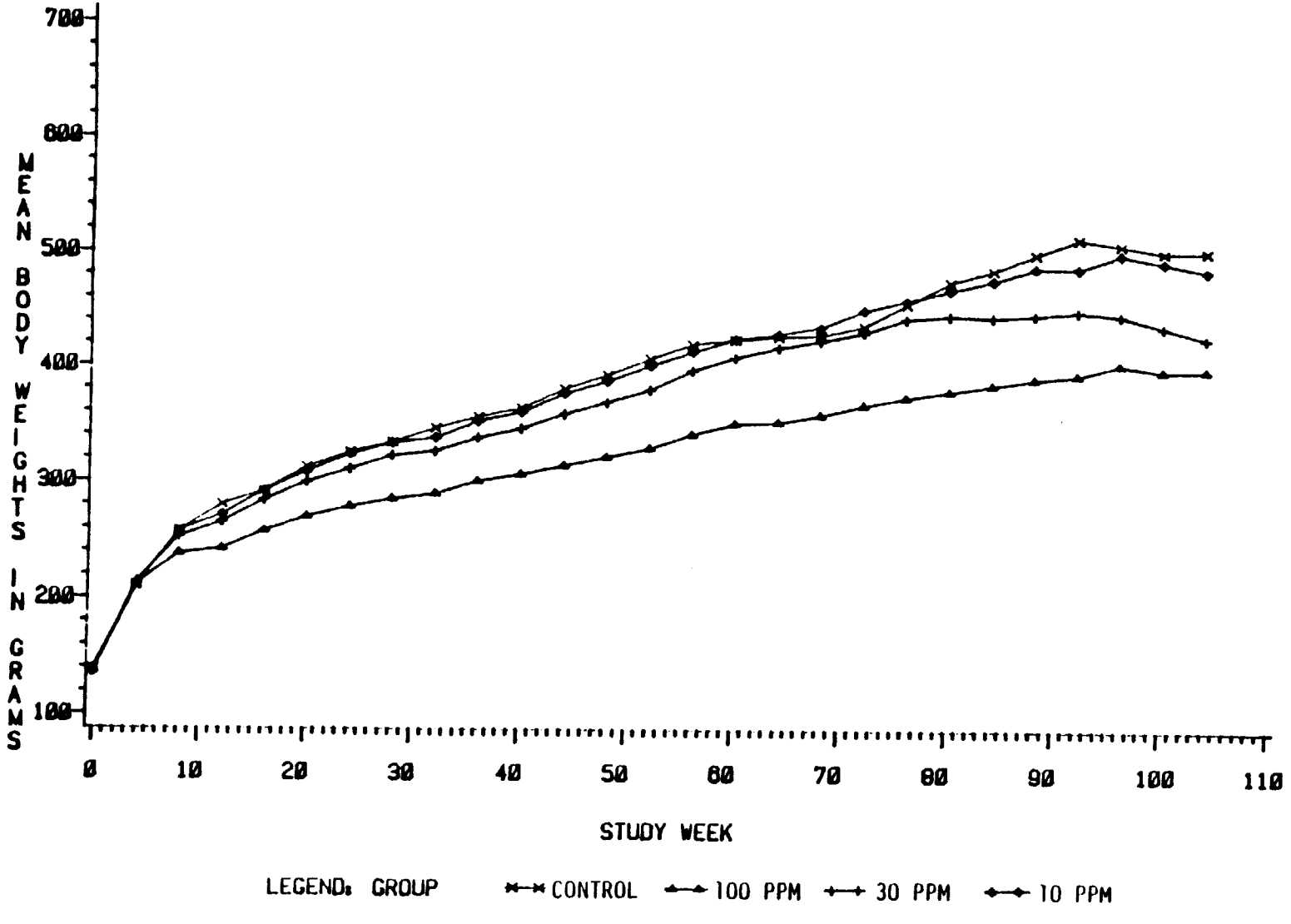

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Figure 3

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
Mean Food Consumption Per Kilogram Mean Body Weight - Males

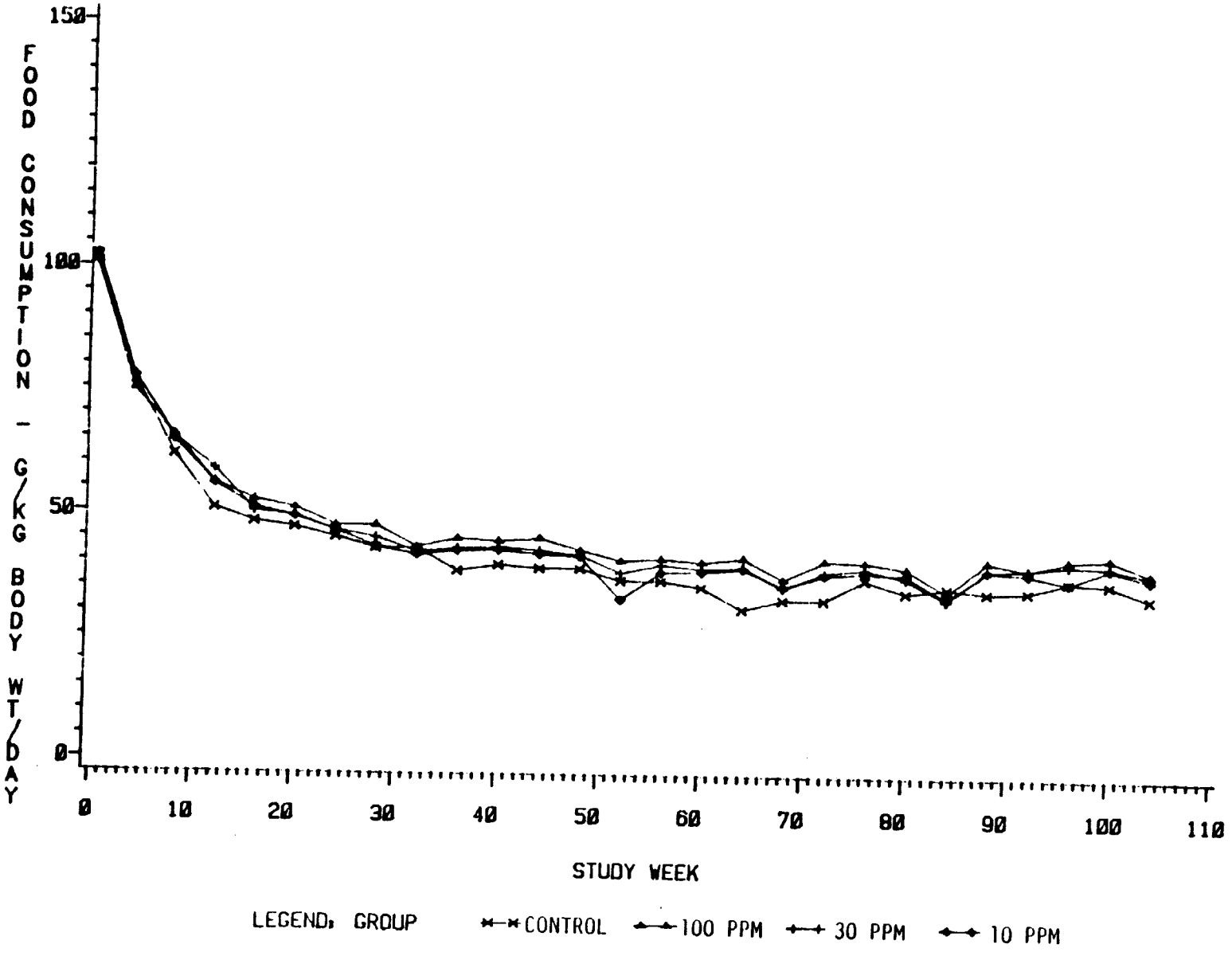

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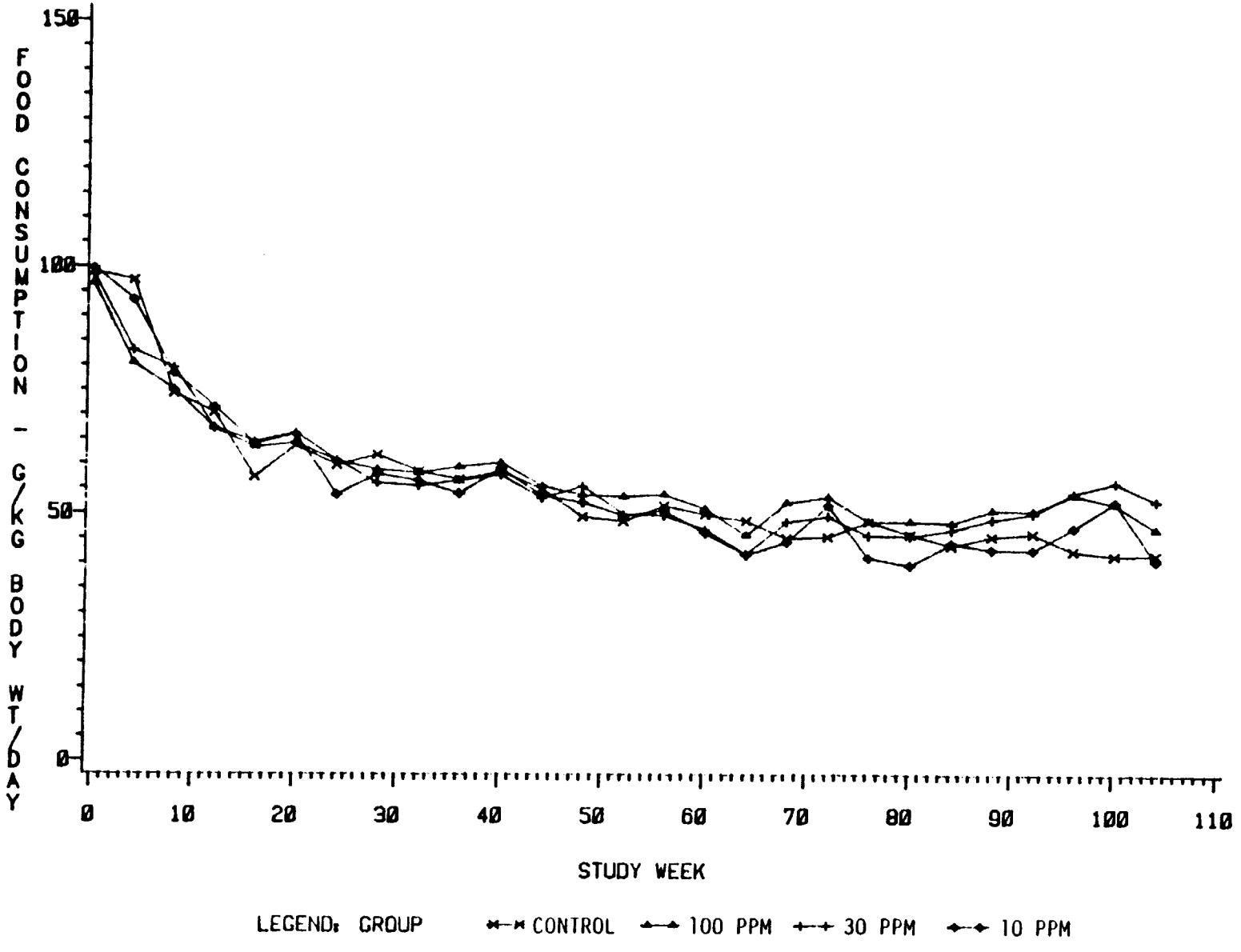
Figure 4

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats
Mean Food Consumption Per Kilogram Mean Body Weight - Females



TWO YEAR ORAL (DIET) TOXICITY / CARCINOGENICITY

STUDY OF FLUOROCHEMICAL FM-3924 IN RATS

APPENDIX ITEMS

001601

Internal Correspondence

Appendix Item A

cc: F. D. Griffith - 220-2E-02
W. C. McCormick - 220-2E-02

rc: J. K. Sugg - 220-2E-02
F. A. Ubel, M.D. - 220-2E-02

To: M. T. CASE - RIKER LABORATORIES - 218-3S

From: S. D. SORENSON - MEDICAL, IND. HYG. SERV. - 220-2E-02

Subject: Air Monitoring, Project 89003107

Date: August 27, 1981

3M

Summary

Air monitoring has been conducted in three animal treatment room used in fluorochemical studies. The purpose of the monitoring was to evaluate possible airborne contaminants.

The sample results indicate that fluorochemical exposures, if any, were below detectable amounts.

Detail

Air sampling was conducted in the three animal treatment rooms used in the two year animal feeding study of FM-3924 and FC-143. The study has been in progress since April 21, 1981.

Area samples were collected in each of the several treatment rooms by means of either impingers with methanol media or SKC® silica gel sampling tubes. With one exception, samples were located on top of the animal racks. The one exception was an air sampler located near the room air exhaust near the floor. The periods sampled are judged representative of "usual" or steady state conditions.

The flow rate of the sample pumps was checked approximately every 30 minutes throughout the sampling period.

The samples were analyzed by the Analtyical Section of the 3M Central Research Laboratory. This laboratory has full accreditation as an Industrial Hygiene Laboratory by the American Industrial Hygiene Association.

Appendix Item A

The sample results indicate that airborne concentrations of the test fluorochemicals, if any, were below detectable limits. On this basis, it is judged that cross contamination potential by airborne means is unlikely.

Please call of there are any questions.

S. D. Arenson

SDS:cr

Sample Data
Building 218-3
Project #89003107
August 7, 1981

Sample Number	Description	Time	Compound	Concentration, mg/m^3	
CCL81-20	D-340. Control Room, top of rack.	922-1225	FM-3924	< 0.003	< 0.3 ppb
CCL81-23	Same as above	922-1225	FC-143	< 0.001	< 0.1 ppb
CCL81-21	D-332. FM-3924, dose Room. Sampler on top of high dose rack.	926-1236	FM-3924	< 0.003	< 0.3 ppb
CCL81-25	D-332. Sampler at rear room air exhaust about 18 inches above floor.	1055-1236	FM-3924	< 0.025	< 2.5 ppb
CCL81-22	D-338. FC-143, dose Room. Sampler on top of high dose rack.	925-1228	FC-143	< 0.001	< 0.1 ppb
CCL81-24	Same as CCL81-22, duplicate sample using silica gel tube.	931-1228	FC-143	< 0.002	< 0.2 ppb

SAMPLING METHOD: FM-3924 SKC silica gel sampling tubes.
FC-143 Impinger - methanol.

ANALYTICAL METHOD: FM-3924 - gas chromatography, electron capture detector.
FC-143 - derivatization; gas chromatography, electron capture detector.

ANALYTICAL REQUEST: #AB0248.

Internal Correspondence

APPENDIX ITEM A

To: L. J. Sibinski

From: J. D. Johnson

Subject: Analysis of Plasma Samples from Sentinal Rats Housed in Room with Two Year Tox Study-Rats (Riker Study No. 0281CR0012)

Date: October 7, 1985

3M

I have attached the one page protocol attachment for the use of sentinal rats in Riker Study No. 0281CR0012. These samples were collected as described. On July 15, 1981, forty plasma samples (see attached) were transferred to V. Pothapragada (Dr. V) in Commercial Chemicals for analysis of organic fluorine. The results were sent back by Dr. V 8/24/81. All samples were less than one part per million. From this, it can be concluded that there was no airborne fluorine present that was interfering with this study. These data are in SJG Notebook 56531, p 53.

James D. Johnson
Research Specialist
Riker Laboratories, Inc.

001605

Appendix Item A

Internal Correspondence

cc: M.T. Case
F.D. Griffith
R.E. Ober
W.H. Pearlson
R.A. Prokop
[redacted] 218-3

To: V. Pothapragada

From: J.D. Johnson

Subject: Analysis of Plasma Samples from Sentinal Rats Housed in Room with Two Year Tox Study Rats (Riker Study No. 0281 CR 0012).

Date: July 15, 1981

3M

Forty plasma samples from sentinal rats are submitted for fluorine analysis. These samples include 5 male (IR 3861, IR 3862, IR 3863, IR 3864, and IR 3865) and 5 female (IR 4921, IR 4922, IR 4923, IR 4924, and IR 4925) which were sacrificed before dosing was initiated. The other thirty plasma samples were collected at 30 days after dosing started. There are 5 rats of each sex from the control room, from the room in which study rats are receiving FC-143, and from the room in which study rats are receiving FM-3924.

The numbers for these rats are as follows:

5 male Control Room (IR 3866, IR 3867, IR 3868, IR 3869, IR 3870)

5 female Control Room (IR 4926, IR 4927, IR 4928, IR 4929, IR 4930)

5 male FC-143 Room (IR 3876, IR 3877, IR 3878, IR 3879, IR 3880)

5 female FC-143 Room (IR 4936, IR 4937, IR 3838, IR 3839, IR 3840)

5 male FM-3924 Room (IR 3886, IR 3887, IR 3888, IR 3889, IR 3890)

5 female FM-3924 Room (IR 4946, IR 4947, IR 4948, IR 4949, IR 4950)

Please get back to us with the data. It may be that interpretation of the results will lead to specific analysis or to analysis of tissue.

J.D. Johnson/mho

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Appendix Item A

2-2 (Chronic [illegible] Study (24-1)

Kidney Study re 0.2:1 CR [illegible]

Plasma

CCD #	Biker #	Sex				
A Series						
A-193	IR 3861	M	Before dosing	#1	4.24.81	
A-194	IR 3862	M	"	#2	4.24.81	
195	IR 3863	M	"	#3	4.24.81	
196	IR 3864	M	"	#4	4.24.81	
197	IR 3865	M	"	#5	4.24.81	
~~198~~						
198	IR 4921	F	"	#1	5.13.81	
199	IR 4922	F	"	#2	5.13.81	
200	IR 4923	F	"	#3	5.13.81	
201	IR 4924	F	"	#4	5.13.81	
202	IR 4925	F	"	#5	5.13.81	
203	IR 3866	M	Combi Dose	#1	5.22.81	
204	IR 3867	M	"	#2	5.22.81	
205	IR 3868	M	"	#3	5.22.81	
~~206~~	~~IR 3868~~	M	"	~~#4~~		
206 206	IR 3869	M	"	#4	5.22.81	
207	IR 3870	M	"	#5	5.22.81	
208	IR 4926	F	"	#1	6.5.81	
209	IR 4927	F	"	#2	6.5.81	
210	IR 4928	F	"	#3	6.5.81	
211	IR 4929	F	"	#4	6.5.81	
212	IR 4930	F	"	#5	6.5.81	
213	IR 3876	M	Fc-143 Dose	#1	5.22.81	
214	IR 3877	M	"	#2	5.22.81	
215	IR 3878	M	"	#3	5.22.81	
216	IR 3879	M	"	#4	5.22.81	
217	IR 3880	M	"	#5	5.22.81	
~~21~~						

Fppm Serum

all < 1 Ppm

(To be [illegible])

all below 1 Ppm

Received [illegible] V Pathology [illegible]

001607

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CCD A Series	Reference #				
218	IR 4936	F	FC-143 Room	#1	6·5·81
219	IR 4937	F		#2	6·5·81
220	IR 3838	F		#3	6·5·81
221	IR 3839	F		#4	6·5·81
222	IR 3840	F		#5	6·5·81
223	IR 3886	M	FM-3924 Room	#1	5·22·81
224	IR 3887	M		#2	5·22·81
225	IR 3888	M		#3	5·22·81
226	IR 3889	M		#4	5·22·81
227	IR 3890	M		#5	5·22·81
228	IR 4946	F		#1	6·5·81
229	IR 4947	F		#2	6·5·81
230	IR 4948	F		#3	6·5·81
231	IR 4949	F		#4	6·5·81
232	IR 4950	F		#5	6·5·81

all below 1 ppm

232
193
39 +1
40 ✓

Received from V. Pothapragada 8/24/81 mc

Appendix Item B

Two Year Oral (Diet) Toxicity - Oncogenicity Study
of Flurorcarbon FM-3924 in Rats

Blending Procedure of FM-3924 Diet Concentrate

---

1. FM-3924 (0.24 g/kg of diet to be mixed) was dissolved in ethanol[a] (approximately 6 - 10 ml) in a 10 ml graduated cylinder.

2. This solution was "sprinkled" in layers of non-treated ground diet to be mixed. The graduated cylinder was also worked with an additional 5 ml of ethanol and this also was "sprinkled" into the diet.

3. The treated diet was physically mixed for approximatly 20 minutes using a Hobart® blender.

4. After mixing, the FM-3924 diet concentrate was spread out in stainless steel pans (66.5 cm long x 40.7 cm wide x 3.0 cm deep) and placed into a fume cabinet for approximately 72 hours to evaporate the ethanol[b].

   This procedure was done on a weekly basis to yield a FM-3924 concentration of 200 ppm in diet.

---

[a] U.S. Industrial Chemicals Co., Div. of National Distillers & Chemicals Corp., Chicago, IL; 190 proof; Lot #480316.

[b] CCD Analytical Report #213 revealed the level of ethanol (ETOH) in the FM-3924 diet concentrate after drying to be less than 1 ppm.

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Appendix Item B

To [redacted]

From: P. J. Colbert - 236-2B

Subject: GLC Analysis of FM-3924 (T-2999CoC) FC-143 (T-2998CoC) Blended into Ground Lab Chow. (Riker Study #0281CR0012)

Date: April 29, 1981

3M

Reference: Commercial Chemicals Analytical Laboratory Requests #17079, 17080, 17096

Commercial Chemicals Analytical Laboratory Method #'s G30-0481, G31-0481

The samples of FM-3924 (W.R. EtFOSE) blended into Ground Lab Chow, along with four blank Ground Lab Chow samples, were received from L. J. Sibinski on 4-20-81 for analysis. All samples were run in triplicate. The results are:

Compound	Theoretical ppm	Actual ppm ug/g FM-3924
Blank for concentrate	0	0
FM-3924 Concentrate (blended 4-17-81)	200	214
FM-3924 Top Sample	100	105
Mid Sample	100	105
Bottom Sample	100	111
FM-3924 Top Sample	30	29
Mid Sample	30	27
Bottom Sample	30	30
FM-3924 Top Sample	10	11
Mid Sample	10	9
Bottom Sample	10	10

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Compound	Theoretical ppm	Actual ppm (ug/g) FM-3924
Blank for 100 ppm level	0	0
Blank for 30 ppm level	0	0
Blank for 10 ppm level	0	0

The level of ethanol in FM-3924 Concentrate (blended 4-17-78) was also checked and found to be less than 1 ppm (ug/g).

Six samples of FC-143 blended into Ground Lab Chow, along with two blank Ground Lab Chow samples were received from L. J. Sibinski on 4/20/81 for analysis. All samples were run in triplicate. The results are:

Compound	Theoretical ppm	Actual ppm (ug/g) FC-143
FC-143 Top Sample	300	326
Mid Sample	300	282
Bottom Sample	300	297
Blank for 300 ppm level	0	0
FC-143 Top Sample	30	24
Mid Sample	30	23
Bottom Sample	30	28
Blank for 30 ppm level	0	0

Because two of the three 30 ppm level samples were low, another set of samples were received from L. J. Sibinski on 4/27/81 for analysis. The results are:

dc: M. T. Case 218-2
E. G. Lamprecht 218-3
J. D. LaZerte 236-1
W. C. McCormick 220-2E-02
V. Pothapragada 236-3A
R. A. Prokop 236-2B
L. D. Winter 236-2B

Commercial Chemicals
Analytical Report
#229

Appendix Item B

To: [redacted]

From: P. J. Colbert 236-2B

Subject: GLC Analysis of FM-3924 (T-2999 CoC) FC-143 (T-2998 CoC) Blended Into Ground Lab Chow (Riker Study #0281CR0012)

Date: June 15, 1981

3M

Reference: Commercial Chemicals Analytical Laboratory Requests #17172, 17173.

Commercial Chemicals Analytical Laboratory Method #'s G30-0481, G31-0481.

Ten samples of FM-3924 (W.R. E+FOSE) blended into Ground Lab Chow, along with three blank Ground Lab Chow samples, were received from L. J. Sibinski on 5-18-81 for analysis. All samples were run in triplicate. The results are:

Sample	Theoretical ppm	Actual ppm µg/g FM-3924
FM-3924 Concentrate (Blended 5/15/81)	200	208
Blank for 100 ppm	0	0
FM-3924 Top	100	109
Mid	100	108
Bottom	100	96
Blank for 30 ppm	0	0
FM-3924 Top	30	33
Mid	30	31
Bottom	30	27
Blank for 10 ppm	0	0
FM-3924 Top	10	11.3
Mid	10	11.5
Bottom	10	10.0

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cc: [illegible]
E. G. Lamprecht - 218-3
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E-02
V. Pothapragada - 236-3A
R. A. Prokop - 236-2B
L. D. Winter - 236-2B
G. W. Kirsch - 236-3A

Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #251

To: L. J. SIBINSKI - 218-3-3

From: P. J. COLBERT - 236-2B

Subject: GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281CR0012)

Date: September 8, 1981

3M

Reference: Commercial Chemical Analytical Laboratory R[redacted] and CCD Method 630-0481.

Ten samples of FM-3924 (W. R. EtFOSE) blended into ground rat show, along with four blank ground rat chow samples, were received from L. J. Sibinski on August 17, 1981, for analysis. All samples were run in triplicate. The results are:

Sample	Theoretical ppm	Actual ppm g/g FM-3924
Blank for 200 ppm	0	0
200 ppm Concentrate	200	214 +7%
Blank for 100 ppm	0	0
100 ppm Top	100	110
100 ppm Mid	100	108 (110 ave)
100 ppm Bottom	100	112
Blank for 30 ppm	0	0
30 ppm Top	30	31
30 ppm Mid	30	31 (30.67 ave)
30 ppm Bottom	30	30
Blank for 10 ppm	0	0
10 ppm Top	10	11.5
10 ppm Mid	10	10.6 (10.7 ave) +7%
10 ppm Bottom	10	10.0

PJC/hc Paul J Colbert

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Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #290

To: L. J. SIBINSKI [redacted]

From: R. M. PAYFER - 236-2B

Subject: GLC ANALYSIS OF FM-3924(T-2999CoC)BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281 CR0012)

Date: December 1, 1981

3M

Reference: Commercial Chemicals Analytical Laboratory Request #17780

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with three blank ground rat chow samples, were received from L. J. Sibinski on November 16, 1981, for analysis. All samples were run in triplicate with the following results:

Sample	Theoretical PPM	Actual PPM ug/g FM-3924
200 PPM Concentrate	200	217
Blank for 100 PPM	0	0
100 PPM Top	100	108
100 PPM Middle	100	103
100 PPM Bottom	100	104
Blank for 30 PPM	0	0
30 PPM Top	30	29
30 PPM Middle	30	29
30 PPM Bottom	30	31
Blank for 10 PPM	0	0
10 PPM Top	10	9.4
10 PPM Middle	10	10.1
10 PPM Bottom	10	9.5

RMP/hc

R. M. Payfer

dc: M. T. Case - 218-2
G. W. Kirsch - 236-3A
E. G. Lamprecht - 218-3
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E-02
V. Pothapragada - 236-3A
R. A. Prokop - 236-2B
L. D. Winter - 236-2B (2 copies)

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dc: M.T. Case - 218-2
G.W. Kirsch - 236-3A
E.G. Lamprecht - 218-3
J.D. LaZerte - 236-1
W.C. McCormick - 220-2E-02
V. Pothapragada - 236-3A
L.D. Winter - 236-2B

Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #320

To: L. J. SIBINSKI - 218-3-3

From: R. M. PAYFER - 236-2B

Subject: GLC ANALYSIS OF FM-3924 (T2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281 CR 0012)

Date: MARCH 5, 1982

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18072

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with three blank ground rat chow samples, were received from L. J. Sibinski on February 15, 1982. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical PPM	Actual PPM ug/g FM-3924
200 PPM concentrate	200	198
Blank for 100 PPM	0	0
100 PPM Top	100	107
100 PPM Middle	100	106
100 PPM Bottom	100	103
Blank for 30 PPM	0	0
30 PPM Top	30	31
30 PPM Middle	30	29
30 PPM Bottom	30	24
Blank for 10 PPM	0	0
10 PPM Top	10	8.8
10 PPM Middle	10	9.0
10 PPM Bottom	10	5.7

Richard M. Payfer

RMP:df

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cc: M.T. Case - 218-2
G.W. Kirsch - 236-3A
E.G. Lamprecht - 218-3
J.D. LaZerte - 236-1
W.C. McCormick - 220-2E-02
V. Pothapragada - 236-2B
L.D. Winter - 236-2B

Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #327

To: [redacted]

From: R. M. PAYFER - 236-2B

Subject: GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281 CR 0012)

Date: MARCH 22, 1982

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18101

Three samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with one blank ground rat chow sample, were received from L. J. Sibinski on March 8, 1982. These samples were analyzed in triplicate with the following results:

Sample	Theoretical PPM	Actual PPM Ug/g FM-3924
Blank for 10 PPM	0	0
10 PPM Top	10	10.6
10 PPM Middle	10	9.7
10 PPM Bottom	10	9.9

10.2 mean +6.7%

Richard M. Payfer

RMP:df

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Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #341

To [redacted]

From R. M. PAYFER - 236-2B

Subject GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281 CR0012)

Date May 28, 1982

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18320

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with four blank ground rat chow samples, were received from L. J. Sibinski on May 17, 1982. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical PP	Actual PPM ug/g FM-3924
200 PPM Concentrate	200	199
Blank for 200 PPM	0	0
Blank for 100 PPM	0	0
100 PPM Top	100	100
100 PPM Middle	100	101
100 PPM Bottom	100	95
Blank for 30 PPM	0	0
30 PPM Top	30	30
30 PPM Middle	30	29
30 PPM Bottom	30	28
Blank for 10 PPM	0	0
10 PPM Top	10	10.5
10 PPM Middle	10	11.9
10 PPM Bottom	10	10.9

R.M. Payfer/hc
RMP/hc

dc: M. T. Case - 218-2
G. W. Kirsch - 236-GB
E. G. Lamprecht - 218-3
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E-02
V. Pothapragada - 236-GB
L. D. Winter - 236-2B

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Appendix Item B

COMMERCIAL CHEMICALS
ANALYTICAL REPORT #367

To: [redacted]

From: R. M. PAYFER - 236-2B

Subject: GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKEP STUDY #0281 CR0012)

Date: Sept. 13, 1982

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18608

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with four blank ground rat chow samples, were received from L. J. Sibinski on Aug. 16, 1982. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical PPM	Actual PPM ug/g FM-3924
200 PPM Concentrate	200	193
Blank for 200 PPM	0	0
Blank for 100 PPM	0	0
100 PPM Top	100	91
100 PPM Middle	100	98
100 PPM Bottom	100	53
Blank for 30 PPM	0	0
30 PPM Top	30	28
30 PPM Middle	30	29
30 PPM Bottom	30	29
Blank for 10 PPM	0	0
10 PPM Top	10	10
10 PPM Middle	10	11
10 PPM Bottom	10	11

RMP/hc Richard Payfer

dc: M. T. Case - 218-2
G. W. Kirsch - 236-GB
E. G. Lamprecht - 218-3
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E-02
V. Pothapragada - 236-GB
L. D. Winter - 236-2B

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Appendix Item B

To [redacted]

From R. M. Payfer - 236-2B

Subject GLC Re-analysis of FM-3924 (T-2999CoC) blended into ground rat chow (Riker Study No. 0281 CR0012)

Date September 14, 1982

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18610

Three samples of FM-3924 (W.R. Et-Fose) blended into ground rat chow, along with a blank ground rat chow sample, were received from L. J. Sibinski on August 27, 1982. These samples were analyzed in triplicate for FM-3924 with the following results.

Sample	Theoretical PPM	Actual PPM ug/g FM-3924
Blank for 100 PPM	0	0
100 PPM top	100	105
100 PPM middle	100	100
100 PPM bottom	100	85

Richard Payfer

RMP:sk

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Appendix Item B

To [redacted]

From G. W. Kirsch - 236-2B

Subject: GLC Analysis of FM-3924 (T-2999 CoC) Blended into Ground Rodent Chow (Riker Study #0281-CR0012)

Date: December 8, 1982

Commercial Chemicals
Analytical Report #383

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18854.

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with four blank ground rat chow samples, were received from L. J. Sibinski on November 15, 1982. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical ppm	Actual ppm µg/g FM-3924
200 ppm Concentrate	200	223
Blank for 200 ppm	0	0
Blank for 100 ppm	0	0
100 ppm Top	100	112
100 ppm Middle	100	112
100 ppm Bottom	100	98
Blank for 30 ppm	0	0
30 ppm Top	30	34
30 ppm Middle	30	32
30 ppm Bottom	30	34
Blank for 10 ppm	0	0
10 ppm Top	10	12
10 ppm Middle	10	12
10 ppm Bottom	10	10

G Kirsch

GWK:ch

dc: M. T. Case - 218-2
E. G. Lamprecht - 218-3
J. D. LaZerte - 216-1L
W. C. McCormick - 220-2E
R. M. Payfer - 236-2B
V. Prothapragada - 236-GB
L. D. Winter - 236-2B

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Appendix Item B

Commercial Chemicals
Analytical Report #394

To L. J. SIBINSKI - 218-3

From G. W. KIRSCH - 236-2B

Subject GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281-CR0012)

Date MARCH 1, 1983

3M

Reference: Commercial Chemicals Analytical Laboratory Request #18854

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with four blank ground rat chow samples, were received from L. J. Sibinski on February 16, 1983. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical ppm	Actual ppm ug/g FM-3924
200 ppm Concentrate	200	167
Blank for 200 ppm	0	0
Blank for 100 ppm	0	0
100 ppm Top	100	92
100 ppm Middle	100	104
100 ppm Bottom	100	80
Blank for 30 ppm	0	0
30 ppm Top	30	27
30 ppm Middle	30	25
30 ppm Bottom	30	29
Blank for 10 ppm	0	0
10 ppm Top	10	9
10 ppm Middle	10	8
10 ppm Bottom	10	8

G. Kirsch

GWK/hc

dc: M. T. Case - 218-2
E. G. Lamprecht - 218-3
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E
R. M. Payfer - 236-2B
W. H. Pearlson - 223-6SE
L. D. Winter - 236-2B

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Appendix Item B

Commercial Chemicals
Analytical Report #403

To: L. J. SIBINSKI - 218-3

From: G. W. KIRSCH - 236-2B

Subject: GLC ANALYSIS OF FM-3924 (T-2999 CoC) BLENDED INTO GROUND RODENT CHOW (RIKER STUDY #0281-CR0012)

Date: APRIL 19, 1983

3M

Reference: Commercial Chemicals Analytical Laboratory Request #19332

Ten samples of FM-3924 (W.R. EtFOSE) blended into ground rat chow, along with four blank ground rat chow samples, were received from L. J. Sibinski on April 13, 1983. All samples were analyzed in triplicate for FM-3924 with the following results:

Sample	Theoretical ppm	Actual ppm ug/g FM-3924
200 ppm Concentrate	200	207
Blank for 200 ppm	0	0
Blank for 100 ppm	0	0
100 ppm Top	100	101
100 ppm Middle	100	99
100 ppm Bottom	100	103
Blank for 30 ppm	0	0
30 ppm Top	30	31
30 ppm Middle	30	29
30 ppm Bottom	30	28
Blank for 10 ppm	0	0
10 ppm Top	10	9
10 ppm Middle	10	9
10 ppm Bottom	10	8

GWK/hc G.Kirsch

dc: M. T. Case - 218-2
J. D. LaZerte - 236-1
W. C. McCormick - 220-2E
R. M. Payfer - 236-2B
W. H. Pearlson - 223-6SE
L. D. Winter - 236-2B

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Appendix Item C

Two Year Oral (Diet) Toxicity-Oncogenicity Study of Fluorocarbon FM-3924 in Rats

Normal Ranges for Hematologic and Blood Chemistry Values of Rats at Riker Laboratories, Inc., St. Paul, MN

Erythrocytes	5,000,000-8,000,000 cells/cu mm
Hemoglobin	11-17 g/dl
Hematocrit	36-52%
Mean Corpuscular Volume (MCV)	57-77 microns^3
Mean Corpuscular Hemoglobin (MCH)	18-24 picograms
Mean Corpuscular Hemoglobin Concentration (MCHC)	30-34%
Leukocytes	6,000-15,000 cells/cu mm
Neutrophils 2-22%	500-4,000 cells/cu mm
Lymphocytes 65-95%	5,000-14,000 cells/cu mm
Monocytes 0-5%	0-500 cells/cu mm
Eosinophils 0-6%	0-500 cells/cu mm
Blood Urea Nitrogen (BUN)	10-30 mg/dl
Glucose	120-160 mg/dl
Total Bilirubin	0.1-1.0 mg/dl
Total Protein	5.5-7.5 g/dl
Albumin	3.5-5.5 g/dl
Calcium	10.2-12.5 mg/dl
Alanine Aminotransferase (ALT)	10-40 International Units/l
Aspartate Aminotransferase (AST)	20-60 International Units/l
Alkaline Phosphatase	50-200 International Units/l
Creatine Phosphokinase (CPK)	50-150 International Units/l

Appendix Item C

Methods Used for Hematology On Bleedings at 3 and 6 Months

Parameters	Units	Methods
Hematology		
Total Erythrocytes & Leukocytes	cells/cubic mm	Coulter Counter Model FN Coulter Electronics
Hemoglobin	g/dl	Hemoglobinometer, Model 231, Instrumentation Laboratories
Hematocrit	% packed cells	Microhematocrit Centrifuge, Model MB International Equipment Co.
Differential	%/100 WBC	Microscope slide

APPENDIX ITEM C

METHODS USED FOR HEMATOLOGY DETERMINATIONS FOR 12, 18 AND 24 MONTHS

METHODS USED FOR CLINICAL CHEMISTRY DETERMINATIONS FOR 3, 6, 12, 18 AND 24 MONTHS

Parameters	Units	Methods and Techniques
Hematology		
Erythrocytes	cells($10^6/mm^3$)	UltraLogic 800 Hematology Analyzer
Leukocytes	cells($10^3/mm^3$)	
Hemoglobin	g/dl	Clay Adams, Division of Becton, Dickinson & Co.
Hematocrit	%	
Differential	%/100 WBC	Microscope slide
Chemistry		
Total Bilirubin, Glucose Blood Urea Nitrogen	mg/dl	Rotochem 36 IIA Travenol Laborataories, Inc.
Albumin, Total Protein	g/dl	
Alkaline Phosphatase	International Units/l	
AST, ALT, CPK		
Urinalysis		
Specific Gravity		TS Meter, AO Instrument Co.
pH, Albumin, Bilirubin, Glucose, Occult Blood and Ketones		BiliLabstix Ames Company

APPENDIX ITEM D

PATHOLOGY REPORT OF RATS
RECEIVING FLUOROCHEMICAL FM-3924
IN DIET FOR TWO YEARS

METHODS

Gross Pathology

All rats which were sacrificed at the 1 year interim or the 2 year terminal sacrifice or which died or were sacrificed *in extremis* during the course of study were necropsied. At necropsy, an examination was made of the external body surface and body orifices. The carcass was then opened and the contents of the abdomen, thorax and cranium were examined *in situ* and after removal from the carcass. Representative tissues and organs from each rat were fixed in 10% buffered neutal formalin for subsequent histologic processing. At the 1 and 2 year sacrifices, wet weights were obtained on adrenals, brain, testes, heart, kidneys, liver, spleen and uterus from 15 randomly selected rats/sex/group. Body weights were obtained prior to necropsy from the same rats for calculation of relative organ weights.

Histopathology

Microscopic examination was made of hematoxylin and eosin stained paraffin tissue sections of the following tissues and organs, where available, from all rats from the control group (0 ppm) and the 100 ppm group which were sacrificed at 1 and 2 years or which died or were sacrificed *in extremis* during the course of study.

- aorta
- adrenals (2)
- brain (3 sections including frontal cortex and basal ganglia, parietal cortex and thalamus; cerebellum and pons)
- eyes
- gonads
  - ovaries (2)
  - testes/epididymides (2)
- heart
- small intestine (3 sections)
- large intestine
- kidneys (2 sections)
- liver (2 sections)
- lung (2 sections)
- lymph node (mesenteric)
- mammary gland (females)
- pancreas
- pituitary
- salivary gland
- spinal cord/bone marrow (vertebrae)
- spleen
- stomach
- thyroid/parathyroid/trachea/esophagus
- urinary bladder
- uterus or prostate
- any tissue masses (suspected tumors)
- any other gross lesions

Microscopic examination of tissues from the 30 and 10 ppm groups included all the above listed tissues except aorta, brain, eyes, small and large intestine, lymph node and spinal cord/bone marrow.

RESULTS

Gross Pathology

At the 1 year interim sacrifice, an increased incidence of pale/tan color livers described in male rats from the 100 ppm group was considered possibly compound related. There were no necropsy findings suggestive of a compound effect in female rats from the 100 ppm group which were sacrificed at 1 year. In rats which were sacrificed at study termination or which died or were sacrificed in extremis during the course of study (TS/DOS), an increased incidence was noted for liver masses, nodules and raised lesions, mottled livers and yellow or pale liver foci and lesions at the 100 ppm level in males and females. No gross findings suggestive of a compound effect were seen in any TS/DOS rats from the 30 or 10 ppm groups. Other gross pathologic findings were typical of findings in ageing rats of this strain. These included mammary masses, pituitary masses and foci, ulcers on the hind footpads, pale livers and pale, pitted and enlarged kidneys.

Organ Weights

There were several statistically significant ($p < 0.05$) variations in absolute and relative organ weights (organ:body, organ:brain weight ratios) in male and females rats from the 100 ppm group which were sacrificed at 1 year. Increases in absolute liver weight and in liver:brain weight ratios in males and females from the 100 ppm group correlated with compound related morphologic changes and were considered toxicologically significant. A significant decrease in group mean body weight in male and female rats from the 100 ppm group at 1 year also was considered toxicologically significant. None of the other organ weight variations in 100 ppm rats at the 1 year interim was considered of toxicologic significance.

At the terminal sacrifice, statistically significant increases occurred in absolute liver weight and in liver:body and liver:brain weight ratios in males and females at the 100 ppm level. A significant increase in liver:body weight ratio also occurred in 30 ppm males and females. These increases in liver weight correlated with morphologic liver changes and were considered toxicologically significant. A statistically significant decrease in body weight in males and females at 100 ppm also was considered toxicologically significant. No morphologic correlates were observed for other statistically significant organ weight variations and they were not considered toxicologically significant.

Histopathology

Compound related microscopic changes were observed in the livers of male and female rats from the 100 ppm group at the 1 year interim sacrifice, in male and female TS/DOS rats from the 100 and 30 ppm groups and in male TS/DOS rats from the 10 ppm group. The principal compound related liver change was megalocytosis, which was characterized by an increase in size of liver parenchymal cells due to an increase in cytoplasmic volume. The increased cytoplasm was of a finely granular "ground glass" appearance. The coarser cytoplasmic organelles were relatively decreased and were displaced to the cell membrane. The nucleus:cytoplasm ratio was decreased by the increase in cytoplasmic volume in affected cells. Most or all lobules in affected livers were involved and the centrilobular cells were more severely affected. At the 1 year interim, megalocytosis occurred to a mild to marked degree in 15/15 males and to a minimal to moderate degree in 14/15 females from the 100 ppm group. The lesion was accompanied by mild to moderate hepatocyte vacuolation, probably fatty, in 14/15 males and by minimal to mild necrosis in 6/15. In females, minimal to mild hepatocyte vacuolation occurred in 5/15 controls and 15/15 100 ppm rats but necrosis was not seen. Association of hepatocyte vacuolation and necrosis with megalocytosis suggests that the progression of lesions is megalocytosis to fatty degeneration to necrosis.

In TS/DOS rats, megalocytosis occurred in males from the 100, 30 and 10 ppm groups with a dose response evident in incidence and severity. In female TS/DOS rats, megalocytosis occurred only at the 100 and 30 ppm levels; the 10 ppm level was free of compound related microscopic lesions in females. The incidence of megalocytosis in TS/DOS males was 0/50, 42/50, 28/50 and 27/50 at the 0, 100, 30 and 10 ppm levels, respectively. In females, the incidence was 44/50 and 1/50 at the 100 and 30 ppm levels. The incidence of megalocytosis was statistically significant in male rats at the 100, 30 and 10 ppm levels and in females at the 100 ppm level. Incidence and severity of hepatocyte vacuolation and necrosis also was increased in 100 ppm TS/DOS males; the increased incidence of these lesions was statistically significant at this level. Five hyperplastic nodules occurred in males at the 100 ppm level and 1 was seen at the 30 ppm level. Presence of hyperplastic nodules indicated regeneration was occurring in these livers. There were 9 hyperplastic nodules in 100 ppm females and 1 in a control female; this increase was statistically significant. Cystoid degeneration, characterized by areas of multilocular microcysts in the liver parenchyma,

also was increased in male rats from the 100 and 30 ppm groups and in females from the 100 ppm group. Incidence of this lesion in males was 4/50, 15/50, 8/50 and 6/50 at 0, 100, 30 and 10 ppm, respectively. The increased incidence at the 100 ppm level was statistically significant. In females, the incidence of cystoid degeneration was 4/50 in the 100 ppm group and 0/50 in all other groups.

Occurrence of these liver histomorphologic changes correlated with elevations in alkaline phosphatase, aspartate aminotransferase and alanine aminotransferase levels observed in 100 ppm male rats. The markedly reduced incidence and severity of histomorphologic liver changes in female rats parallels the absence of change in liver specific serum biochemical values in females.

There was no direct or indirect compound effect in tissues other than liver at the 1 year interim sacrifice. In TS/DOS rats, changes which were considered secondarily compound related, probably through FM-3924 altered liver metabolism of endogenous steroids, were observed in the adrenals and ovaries. In the adrenals, a statistically significant increased incidence of nodular hyperplasia of the cortex occurred in males at the 100 ppm level. Incidence of this lesion was 2/49, 11/50, 0/49 and 5/50 at the 0, 100, 30 and 10 ppm levels, respectively. In females, there was a dose related occurrence of tubular hyperplasia of the ovarian stroma. Tubular hyperplasia is a non-neoplastic diffuse increase in tubular elements of the ovarian stroma which was usually bilateral and associated with absent or markedly reduced follicular development. The incidence of this condition, which was statistically significant at all dose levels, was 0/48, 15/48, 11/48 and 6/47 at the 0, 100, 30 and 10 ppm levels, respectively. An increased incidence of accumulations of foamy alveolar macrophages in the lung, which was probably compound related, was statistically significant in males and females at the 100 ppm level. The incidence of this condition at the 0, 100, 30 and 10 ppm levels, respectively, was 10/50, 23/50, 15/50 and 18/50 in males and 14/50, 27/50, 15/50 and 14/50 in females.

There was no increased incidence of neoplasia suggestive of a compound effect in male rats. Incidence of primary liver tumors (hepatocellular carcinomas) in males was 3/50, 2/50, 1/50 and 1/50 at 0, 100, 30 and 10 ppm, respectively. In females, the only occurrence of primary liver tumors was at the 100 ppm level where there were 3 hepatocellular carcinomas and 4 hepatocellular adenomas. This increased incidence of these primary liver tumors in high dose female rats was not statistically significant. There was no other incidence of neoplasia

suggestive of a compound effect in female rats.

Other microscopic lesions in tissues from FM-3924 treated rats were typical of naturally occurring inflammatory, degenerative and neoplastic lesions in an ageing population of Charles River CD rats. Commonly occurring inflammatory lesions included chronic nonsuppurative myocarditis with associated myocardial fibrosis, mononuclear inflammatory cell infiltrate into the portal triads of the liver which was frequently associated with portal bile duct proliferation and perivascular mononuclear inflammatory cell infiltrate and multifocal chronic interstitial pneumonia in the lung. There were a number of non-neoplastic lesions which, although they had a statistically significant variation in incidence compared to control group levels, were not considered to be of toxicological significance. These included decreased incidence of chronic myocarditis in 100 ppm females, decreased incidence of perivascular mononuclear cell infiltrate in the lung of 100 ppm males, increased incidence of vascular mineralization in the lung of 100, 30 and 10 ppm females, decreased incidence of interstitial pneumonia in 10 ppm males, increased incidence of vascular mineralization in the testes of 10 ppm males and decreased incidence of epithelial hyperplasia of the urinary bladder epithelium of 10 ppm females.

Some of the more commonly occurring degenerative lesions in this study included adrenal cortical vacuolation and sinusoidal ectasia, focal mineralization in large pulmonary artery branches in the lung, focal acinar atrophy in the pancreas and chronic progressive nephropathy. Pituitary adenomas were the most common neoplasm in male and female rats. Mammary adenocarcinomas and fibroadenomas also were frequently observed in female rats. Overall, the health of the rats in this study was excellent, with organs free of lesions of common infectious diseases which would have had an impact upon survival or the validity of the study.

Robert G. Geil, D.V.M.
Diplomate, American College
of Veterinary Pathologists

9/27/81
Date

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Macroscopic Incidence for Males
Riker Laboratories, Inc. 3M
Table 1
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim

Project Number: 0231CR0012 Species: Rat

Site/ Description	Group 1	Group 2
No visible lesions	9	7
Eye		
opacity		1
atrophy		1
Liver		
pale/tan color	2	6
Mesentary		
fat necrosis	1	
Kidney		
hydronephrosis	1	
cystic lesion	1	
Skin		
hair loss		1
Soft Tissue (thorax)		
mass		1
Soft Tissue (leg)		
swollen foot	1	

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

Macroscopic Incidence for Females
Riker Laboratories, Inc. 3M
Table: 2
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2
No visible lesions	5	9
Eye		
atrophy	1	
Pituitary		
enlarged	3	
Adrenal		
enlarged	1	
Liver		
pale/tan*	1	1
herniated lobe		1
Mesentary		
mass	1	1
Kidney		
hydronephrosis	1	
Uterus		
cystic lesion	1	
enlarged	1	
dilated, fluid filled		1
Mammary Gland		
mass	1	
Skin		
hair loss	2	1
mass		1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

* includes "possibly"

001634

Macroscopic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 3

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
No visible lesions	11	7	8	16
Brain				
dark area	1	1		
Eye				
opacity/cloudy		1	1	2
ulcer/lesion		2	1	1
atropny			1	
Pituitary				
mass/enlarged/raised lesion	7	13	18	10
dark/hemorrhagic/red foci	4	4	3	1
Thyroid				
enlarged*	1	3	1	1
Adrenal				
enlarged/mass	2	3	3	3
cyst			1	
Throax (internal)				
fluid filled	1		1	
Thymus				
enlarged*	1		1	
hemorrhagic/hemorrhagic lesion		1		
Lung				
mottled	1			
frothy tracheal exudate	1			
consolidation*		1		
mass/raised lesion		1		1
hyperemic		1		
Heart				
flaccid/flabbly	1			1
enlarged*		1		
pale	1			
Abdomen (internal)				
gas, gastrointestinal tract	1	1		
stomach empty of food	1			
mass, omentum	1	1		
fluid filled				1
Esophagus				
enlarged;thickened wall				1
Stomach				
edema/thickened wall	1		1	
enlarged rugae		1		1
erosions/ulcerations*	1	1	1	1
Small Intestine				
mass		1		
hemorrhage				1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

* includes "possibly"

001635

Macroscopic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 3

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
Large Intestine				
hemorrhagic				1
Pancreas				
mass/nodule	2			1
Liver				
pale/pale lobes*	10	6	4	5
mass/nodule/raised lesion	3	6	2	1
mottled*		9	1	3
yellow/pale foci/lesion	1	8		1
enlarged	1	3		
infarct		1		
dark lesion			1	
shrunken lobes				1
irregular surface			1	
Spleen				
enlarged	3	3	2	1
raised lesion	1		2	
pale foci	2			
pale, depressed area	1			
dark		1		
small*		2		1
Lymph node (mesenteric/abdominal)				
enlarged	2		2	
hemorrhagic			2	
mass				1
Mesentery				
nodular/enlarged/thickened vessels	1		1	
bloody cystic lesion		1		
Kidney				
enlarged, pale, pitted	3	2	3	2
pale, pitted	2			
pitted/rough surface		1	1	
pale, enlarged*	1			
pale				1
pale area	1	1	1	
hydronephrosis, pelvic dilatation	2	3		3
cystic/polycystic	3			2
ulcerated area			1	
mass				2

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

* includes "possibly"

001636

Macroscopic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 3

Project Number: C231CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
Urinary Bladder				
distended	1	1		
hematuria/filled with reddish/dark fluid		2		
hemorrhagic wall	1			
calculi		1	1	
Testis/Epididymis				
small	4	3	5	3
enlarged*		1		1
Prostate				
enlarged/thickened/mass		1	1	
edematous			1	
small				1
Mammary Gland				
mass		1		1
Skin				
ulcers/inflamed/circular/raised lesions, hind footpads	7	4	3	5
dermatitis/ulcer/lesion/ inflamed area*	1		3	1
moist area	1			
hair loss	1		1	
mass/thickening	4	4	1	2
abscess	1			
Soft Tissue (neck)				
mass				2
Soft Tissue (thorax)				
mass	1			
Soft Tissue (leg)				
swollen paws/feet	1			1
Bone				
swollen joints	1	1		

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

* includes "possibly"

C01637

Macroscopic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 4

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
No visible lesions	4	6	4	4
Eye				
opacity/cloudy	3	2	1	
inflammation	1	1		
atrophy	1			
Pituitary				
mass/enlarged/raised lesion	25	23	30	33
hemorrhagic/dark lesion		1	1	
cyst		1		
Thyroid				
enlarged				1
Adrenal				
enlarged	8	3	3	5
mass/raised lesion			4	1
pale	1			
Thorax (internal)				
fluid filled				1
mass				1
Thymus				
enlarged			1	
Lung				
mottled	1			
consolidation	2			
nodule	1			
pale	1			
hemorrhagic				1
filled with red fluid				1
Lymph Node (bronchial)				
enlarged	1			
Heart				
pericarditis*			1	
Stomach				
ulcerations/erosions	1		1	1
enlarged rugae		1		
red mucosal areas/reddened	2			
blackish, yellowish fluid contents		1		
Small Intestine				
inflamed	1			
thickened walls				1
Large Intestine				
impaction	1			
mass				1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

* includes "possibly"

001638

Macroscopic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 4

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
Pancreas				
mass/nodule	1		1	
Liver				
pale*	10	6	8	10
mass/nodule/raised lesion	2	8		1
mottled	4	9	2	3
circular lesion/pale foci/pale lesion/ yellowish lesion		9	1	3
enlarged*	2	1	1	1
dark red area/lobe	1			
rough/irregular surface	1			2
dark color/dark brown		2		
Spleen				
enlarged*	5		5	2
small		1		
Lymph node (mesenteric/abdominal)				
enlarged	2		2	1
reddened	1			
Kidney				
enlarged, pale, pitted	2	1		
enlarged*	1		1	1
pale, pitted	1			2
pitted	2		1	
mottled			1	1
cyst	3			2
congenital absence, left				1
Urinary Bladder				
enlarged	1			
calculi	1			
mass	1			
thickened walls	1			
Ovary				
mass	1		1	
cyst		1		
Uterus				
enlarged				2
filled with dark/bloody fluid				2
mass	1		2	1
cystic lesion		1	1	1
dark area/lesion	2			2
prolapsed			1	
congenital absence of left horn, ovary				1
Vagina				
mass			1	

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

* includes "possibly"

001639

Macroscopic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table 4

Project Number: 0281CR0012 Species: Rat

Site/ Description	Group 1	Group 2	Group 3	Group 4
Mammary Gland				
mass/nodule	27	14	24	19
milk cyst		1	2	2
Skin				
raised/inflamed/ulcerated lesion, footpad		1	1	
mass	1	2	2	4
raised lesion	1			
hair loss/thinning	2	1	2	3
circular lesion	1			
Soft Tissues (neck)				
reddened, gland-like structures	1			
Soft Tissues (leg)				
swollen foot	1			
mass				1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

C01640

Non-Neoplastic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim

Table: 5

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Adrenal	(15)	(15)
Within normal limits	12	15
Cortical vacuolation	1	0
mild	1	0
Nodular hyperplasia, cortex	1	0
moderate	1	0
Sinusoidal ectasia, cortex	1	0
moderate	1	0
Aorta	(15)	(15)
Within normal limits	15	15
Bone Marrow	(14)	(15)
Within normal limits	14	15
Brain	(15)	(15)
Within normal limits	15	15
Esophagus	(15)	(15)
Within normal limits	15	15
Eye	(15)	(15)
Within normal limits	15	14
Keratitis, acute	0	1
marked	0	1
Heart	(15)	(15)
Within normal limits	14	15
Myocarditis, chronic nonsuppurative	1	0
mild	1	0
Kidney	(15)	(15)
Within normal limits	5	7
Calculus	1	0
Chronic progressive nephropathy	8	8
minimal	5	6
mild	3	2
Cyst	1	0
Hydronephrosis	1	0
moderate	1	0
Nephritis, interstitial, chronic	1	0
mild	1	0
Pyelitis, acute	1	0
minimal	1	0
Large Intestine	(15)	(14)
Within normal limits	15	14
Liver	(15)	(15)
Within normal limits	7	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Liver (continued)		
Hepatocyte alteration, vacuolated	2	0
minimal	1	0
mild	1	0
Hepatocyte vacuolation	0	14
mild	0	8
moderate	0	6
Megalocytosis	0	15
mild	0	5
moderate	0	5
marked	0	5
Necrosis	0	6
minimal	0	1
mild	0	5
Portal bile duct proliferation	5	8
minimal	1	2
mild	4	6
Portal mononuclear cell infiltrate	7	14
minimal	1	1
mild	6	13
Lung	(15)	(15)
Within normal limits	1	1
Alveolar macrophages	3	3
mild	3	3
Atelectasis	1	1
mild	1	1
Hemorrhage	6	6
mild	6	3
moderate	0	2
marked	0	1
Hyperplasia, septal cell	1	0
mild	1	0
Perivascular mononuclear infiltrate	2	5
minimal	0	1
mild	2	4
Pneumonia, interstitial, chronic	3	3
minimal	1	0
mild	2	3
Vascular mineralization	7	9
minimal	4	1
mild	3	8

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Lymph Node (mesenteric)	(13)	(14)
Within normal limits	13	13
Hemorrhage	0	1
mild	0	1
Hemosiderosis	0	1
mild	0	1
Mammary Gland	(3)	(1)
Within normal limits	3	0
Mesentery	(1)	(0)
Necrosis, fat	1	0
marked	1	0
Steatitis, chronic	1	0
moderate	1	0
Pancreas	(15)	(14)
Within normal limits	11	14
Acinar atrophy	3	0
mild	2	0
moderate	1	0
Pancreatitis, chronic	3	0
mild	3	0
Parathyroid	(7)	(5)
Within normal limits	7	5
Pituitary	(14)	(13)
Within normal limits	13	11
Cyst	1	1
Prostate	(15)	(15)
Within normal limits	15	15
Salivary Gland	(15)	(13)
Within normal limits	15	13
Small Intestine	(15)	(15)
Within normal limits	15	15
Spinal Cord	(14)	(14)
Within normal limits	14	14
Spleen	(15)	(15)
Within normal limits	15	14
Hemosiderosis	0	1
mild	0	1
Stomach	(14)	(14)
Within normal limits	14	14
Testis/Epididymis	(15)	(15)
Within normal limits	15	13

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Testis/Epididymis (continued)		
Tubule atrophy, aspermatogenesis	0	1
mild	0	1
Vascular mineralization	0	1
mild	0	1
Thyroid	(11)	(12)
Within normal limits	11	11
Follicular hyperplasia, cystic	0	1
moderate	0	1
Trachea	(15)	(15)
Within normal limits	15	15
Urinary Bladder	(15)	(14)
Within normal limits	15	14

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Non-Neoplastic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim
Table: 6

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Adrenal	(15)	(15)
Within normal limits	10	13
Cortical degeneration	2	1
mild	2	1
Sinusoidal ectasia, cortex	4	1
mild	3	1
marked	1	0
Aorta	(14)	(15)
Within normal limits	14	15
Bone Marrow	(15)	(15)
Within normal limits	15	15
Brain	(15)	(15)
Within normal limits	15	15
Esophagus	(15)	(12)
Within normal limits	15	12
Eye	(15)	(15)
Within normal limits	14	15
Atrophy	1	0
marked	1	0
Panophthalmitis	1	0
marked	1	0
Heart	(15)	(15)
Within normal limits	14	15
Myocarditis, chronic nonsuppurative	1	0
minimal	1	0
Kidney	(15)	(15)
Within normal limits	6	12
Calculus	4	1
mild	1	0
moderate	1	0
Chronic progressive nephropathy	1	2
mild	1	2
Cyst	1	0
mild	1	0
Hydronephrosis	1	0
moderate	1	0
Hyperplasia, pelvic epithelium	1	0
mild	1	0
Pelvic mineralization	4	2
minimal	4	0
mild	0	1
moderate	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Large Intestine	(14)	(15)
Within normal limits	12	14
Nematodiasis	2	1
Liver	(15)	(15)
Within normal limits	6	0
Hepatocyte alteration, vacuolated	1	0
mild	1	0
Hepatocyte vacuolation	5	15
minimal	3	7
mild	2	8
Megalocytosis	0	14
minimal	0	4
mild	0	7
moderate	0	3
Pigment, Kupfer cell	0	1
mild	0	1
Portal bile duct proliferation	2	3
mild	2	3
Portal mononuclear cell infiltrate	2	3
minimal	1	0
mild	1	3
Telangiectasis	0	1
moderate	0	1
Lung	(15)	(15)
Within normal limits	3	1
Alveolar macrophages	1	3
mild	1	3
Bronchiectasis	0	1
mild	0	1
Hemorrhage	11	10
mild	9	7
moderate	2	3
Perivascular mononuclear infiltrate	1	3
mild	1	3
Pneumonia, interstitial, chronic	1	2
mild	1	2
Vascular mineralization	1	3
mild	1	3
Lymph Node (mesenteric)	(12)	(14)
Within normal limits	12	14

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

C01646

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Mammary Gland	(15)	(15)
Within normal limits	13	13
Galactocele	2	1
Mesentery	(1)	(1)
Necrosis, fat	1	1
moderate	1	1
Steatitis, chronic	1	1
moderate	1	1
Ovary	(15)	(14)
Within normal limits	14	14
Cyst	1	0
Pancreas	(15)	(15)
Within normal limits	14	15
Pancreatitis, chronic	1	0
mild	1	0
Parathyroid	(6)	(4)
Within normal limits	6	4
Pituitary	(15)	(15)
Within normal limits	14	13
Salivary Gland	(15)	(14)
Within normal limits	15	14
Skin	(2)	(1)
Within normal limits	2	1
Small Intestine	(15)	(15)
Within normal limits	15	15
Spinal Cord	(14)	(15)
Within normal limits	14	15
Spleen	(15)	(15)
Within normal limits	14	12
Hemosiderosis	1	3
mild	1	2
moderate	0	1
Stomach	(15)	(15)
Within normal limits	15	15
Thyroid	(14)	(13)
Within normal limits	14	13
Trachea	(15)	(14)
Within normal limits	15	14
Urinary Bladder	(12)	(14)
Within normal limits	12	14

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Uterus	(15)	(15)
Within normal limits	12	7
Cystic glands	1	0
marked	1	0
Endometritis, chronic	0	1
mild	0	1
Hydrometra	0	2
moderate	0	2
Hyperplasia, glandular epithelium	2	1
mild	2	0
moderate	0	1
Metaplasia, squamous	2	6
minimal	0	1
mild	2	4
moderate	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Non-Neoplastic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal	(15)	(34)	(19)	(31)	(14)	(35)	(12)	(33)
Within normal limits	6	13	9	10	4	8	7	19
Atrophy	0	0	1	1	0	0	0	0
mild	0	0	1	0	0	0	0	0
marked	0	0	0	1	0	0	0	0
Cortical degeneration	0	0	0	0	0	2	0	4
mild	0	0	0	0	0	2	0	4
Cortical vacuolation	7	17	6	12	3	12	1	9
minimal	0	2	1	1	0	1	0	0
mild	4	13	5	5	2	8	1	8
moderate	3	2	0	6	1	3	0	1
Hemorrhage	0	0	0	1	0	0	0	0
marked	0	0	0	1	0	0	0	0
Medullary cell hyperplasia	2	6	0	3	0	5	1	1
minimal	0	0	0	0	0	1	0	0
mild	1	4	0	2	0	3	1	0
moderate	1	2	0	0	0	1	0	0
marked	0	0	0	1	0	0	0	0
Nodular hyperplasia, cortex	0	2	4	7	0	0	0	5
minimal	0	0	1	1	0	0	0	0
mild	0	1	3	3	0	0	0	3
moderate	0	1	0	2	0	0	0	1
marked	0	0	0	0	0	0	0	1
Sinusoidal ectasia, cortex	4	7	5	10	7	13	3	2
minimal	0	2	1	3	0	0	0	0
mild	2	3	4	4	4	8	3	1
moderate	2	2	0	3	1	4	0	1
marked	0	0	0	0	2	1	0	0
Aorta	(15)	(34)	(15)	(31)	(0)	(0)	(0)	(0)
Within normal limits	13	34	15	31	0	0	0	0
Mineralization	1	0	0	0	0	0	0	0
mild	1	0	0	0	0	0	0	0
Necrosis	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Bone	(0)	(2)	(1)	(1)	(0)	(0)	(1)	(0)
Arthritis, synovitis; joints	0	2	0	1	0	0	1	0
mild	0	0	0	0	0	0	1	0
moderate	0	0	0	1	0	0	0	0
marked	0	2	0	0	0	0	0	0
Bone Marrow	(15)	(32)	(19)	(31)	(0)	(0)	(0)	(0)
Within normal limits	15	32	19	31	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001649

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Brain	(16)	(34)	(18)	(31)	(0)	(0)	(0)	(0)
Within normal limits	14	33	17	30	0	0	0	0
Abscess	1	0	0	0	0	0	0	0
mild	1	0	0	0	0	0	0	0
Hemorrhage	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Esophagus	(15)	(33)	(17)	(28)	(9)	(15)	(9)	(36)
Within normal limits	15	33	17	28	9	15	9	36
Eye	(12)	(33)	(17)	(31)	(1)	(1)	(1)	(4)
Within normal limits	12	32	14	29	0	1	0	1
Cataract	0	0	0	0	0	0	0	1
Keratitis, acute	0	0	0	0	1	0	0	0
marked	0	0	0	0	1	0	0	0
Keratitis, chronic	0	0	0	0	0	0	1	1
mild	0	0	0	0	0	0	1	0
marked	0	0	0	0	0	0	0	1
Panophthalmitis	0	0	0	2	0	0	0	0
marked	0	0	0	2	0	0	0	0
Phthsis bulbi	0	0	2	0	0	0	0	0
marked	0	0	1	0	0	0	0	0
Retinal atrophy	0	1	0	0	0	0	0	1
mild	0	1	0	0	0	0	0	1
Heart	(15)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Within normal limits	8	23	12	19	3	11	9	15
Endocarditis, chronic	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Epicarditis, chronic	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Myocardial fibrosis	3	2	1	4	1	5	1	2
minimal	0	0	0	0	0	2	0	0
mild	3	2	1	4	1	2	1	6
moderate	0	0	0	0	0	1	0	3
Myocarditis, chronic nonsuppurative	4	10	5	10	5	20	2	10
minimal	0	2	1	2	0	0	0	1
mild	4	7	4	8	4	19	2	16
moderate	0	1	0	0	1	1	0	1
Kidney	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Within normal limits	4	0	1	0	3	4	1	3
Calculus	0	1	1	0	0	6	0	2
minimal	0	1	0	0	0	0	0	0
moderate	0	0	0	0	0	2	0	0
marked	0	0	0	0	0	2	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C016350

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney (continued)								
Chronic progressive nephropathy	10	34	12	31	11	29	10	34
minimal	1	4	4	5	1	7	2	6
mild	5	16	8	15	6	14	7	19
moderate	2	11	0	6	0	7	1	5
marked	2	3	0	4	4	1	0	4
Cyst	1	3	0	0	0	0	1	1
moderate	0	1	0	0	0	0	0	0
marked	1	2	0	0	0	0	0	0
Hydronephrosis	1	2	3	1	0	0	0	2
mild	1	0	0	0	0	0	0	0
moderate	0	2	3	1	0	0	0	0
Hyperplasia, pelvic epithelium	0	0	1	0	0	0	1	1
mild	0	0	1	0	0	0	1	1
Mineralization	0	0	1	0	0	0	1	0
mild	0	0	1	0	0	0	1	0
Nephrosis	1	0	2	0	0	0	0	0
moderate	1	0	2	0	0	0	0	0
Papillary necrosis	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Pelvic mineralization	1	3	0	0	0	3	2	6
minimal	0	1	0	0	0	2	0	0
mild	1	2	0	0	0	4	2	6
moderate	0	0	0	0	0	2	0	0
Pigment, conv. tub. epithelium	0	0	1	0	0	0	0	0
moderate	0	0	1	0	0	0	0	0
Protein resorption droplets	0	0	0	0	1	0	1	0
mild	0	0	0	0	1	0	0	0
marked	0	0	0	0	0	0	1	0
Pyelitis, acute	0	0	0	0	0	2	0	2
minimal	0	0	0	0	0	0	0	1
mild	0	0	0	0	0	1	0	1
moderate	0	0	0	0	0	1	0	0
Pyelonephritis, acute	1	0	2	2	0	1	0	0
mild	1	0	0	1	0	0	0	0
moderate	0	0	2	1	0	1	0	0
Large Intestine	(14)	(34)	(17)	(31)	(0)	(1)	(0)	(0)
Within normal limits	14	28	17	27	0	1	0	0
Nematodiasis	0	6	0	4	0	0	0	0
Liver	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Within normal limits	2	0	0	0	0	2	3	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01651

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver (continued)								
Atrophy	0	0	0	0	0	0	1	0
marked	0	0	0	0	0	0	1	0
Cystoid degeneration	0	4	2	13	1	7	1	5
minimal	0	1	0	2	0	0	0	1
mild	0	2	2	10	1	7	1	4
moderate	0	1	0	1	0	0	0	0
Fibrosis	0	0	0	0	0	0	1	1
mild	0	0	0	0	0	0	0	1
marked	0	0	0	0	0	0	1	0
Hematopoiesis, extramedullary	0	0	1	0	0	0	0	0
mild	0	0	1	0	0	0	0	0
Hepatocyte alteration, basophilic	0	2	0	3	0	3	0	0
mild	0	1	0	1	0	3	0	0
moderate	0	1	0	2	0	0	0	0
Hepatocyte alteration, vacuolated	1	9	0	9	3	13	0	12
minimal	0	0	0	0	0	0	0	1
mild	1	7	0	6	3	9	0	10
moderate	0	2	0	3	0	4	0	1
Hepatocyte vacuolation	8	14	15	24	7	12	3	9
minimal	0	1	0	1	0	1	0	2
mild	4	13	9	8	6	7	2	6
moderate	2	0	3	14	1	4	1	0
marked	2	0	3	1	0	0	0	1
Hyperplastic nodule	0	0	0	5	0	1	0	0
Megalocytosis	0	0	14	28	4	24	1	26
minimal	0	0	2	1	3	12	1	21
mild	0	0	4	10	1	8	0	5
moderate	0	0	5	10	0	4	0	0
marked	0	0	3	7	0	0	0	0
Mitotic activity, increased	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Necrosis	2	1	7	3	0	0	0	2
minimal	0	0	0	1	0	0	0	1
mild	1	0	3	2	0	0	0	1
moderate	1	1	2	0	0	0	0	0
marked	0	0	2	0	0	0	0	0
Pigment	0	0	1	2	0	0	0	0
minimal	0	0	0	1	0	0	0	0
mild	0	0	1	1	0	0	0	0
Portal bile duct proliferation	6	21	8	21	5	16	3	26
minimal	0	0	2	0	1	3	1	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001652

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver (continued)								
Portal bile duct proliferation								
mild	5	21	6	21	3	13	2	25
moderate	1	0	0	0	1	0	0	0
Portal mononuclear cell infiltrate	7	30	7	23	9	20	6	35
minimal	0	2	1	0	1	5	1	2
mild	7	28	6	23	7	15	4	33
moderate	0	0	0	0	1	0	1	0
Telangiectasis	0	0	0	0	1	0	0	0
mild	0	0	0	0	1	0	0	0
Lung	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Within normal limits	0	1	0	0	1	3	0	1
Alveolar macrophages	5	5	6	17	5	10	2	16
minimal	1	2	0	0	0	0	0	0
mild	4	2	6	16	5	8	2	15
moderate	0	1	0	1	0	2	0	1
Atelectasis	0	0	0	0	0	0	1	0
marked	0	0	0	0	0	0	1	0
Edema	3	0	0	0	0	0	1	0
mild	1	0	0	0	0	0	1	0
moderate	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Fibrosis	1	0	0	0	0	0	0	0
mild	1	0	0	0	0	0	0	0
Granuloma	0	0	0	0	1	0	0	0
mild	0	0	0	0	1	0	0	0
Hemorrhage	6	4	10	6	4	10	2	6
mild	2	1	7	2	1	5	1	3
moderate	1	2	3	3	3	4	1	3
marked	3	1	0	1	0	1	0	0
Hyperplasia, septal cell	0	0	0	0	0	2	0	0
mild	0	0	0	0	0	1	0	0
moderate	0	0	0	0	0	1	0	0
Mineralization	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Necrosis	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Peribronchial lymphoid hyperplasia	0	1	0	0	0	0	0	0
mild	0	1	0	0	0	0	0	0
Perivascular mononuclear infiltrate	2	19	1	6	6	14	1	14
minimal	0	2	0	0	0	1	0	0
mild	2	14	1	6	6	12	1	14

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01653

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung (continued)								
Perivascular mononuclear infiltrate								
moderate	0	3	0	0	0	1	0	0
Pneumonia, foreign body	0	0	0	0	0	0	1	0
moderate	0	0	0	0	0	0	1	0
Pneumonia, interstitial, chronic	2	14	0	5	2	5	0	4
minimal	0	0	0	1	0	0	0	0
mild	1	11	0	5	2	5	0	4
moderate	1	3	0	0	0	0	0	0
Thrombus	1	0	0	0	0	0	0	0
Vascular mineralization	10	33	17	31	13	31	11	34
minimal	0	2	0	1	0	1	1	7
mild	10	31	17	29	12	29	10	27
moderate	0	0	0	1	0	1	0	0
Lymph Node	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Sinusoidal ectasia	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Lymph Node (abdominal)	(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Hemorrhage	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Sinusoidal ectasia	0	0	0	0	0	1	0	0
marked	0	0	0	0	0	1	0	0
Lymph Node (mesenteric)	(12)	(33)	(13)	(29)	(1)	(1)	(0)	(1)
Within normal limits	10	29	10	25	0	0	0	0
Hemorrhage	2	4	2	3	0	1	0	0
minimal	1	2	0	2	0	0	0	0
mild	1	1	1	0	0	0	0	0
moderate	0	0	1	1	0	1	0	0
Pigment	0	0	0	1	0	0	0	0
mild	0	0	0	1	0	0	0	0
Sinusoidal ectasia	0	0	1	0	0	0	0	0
moderate	0	0	1	0	0	0	0	0
Mesentary	(0)	(2)	(0)	(1)	(1)	(0)	(0)	(0)
Cyst	0	0	0	1	0	0	0	0
Polyarteritis	0	2	0	0	1	0	0	0
marked	0	2	0	0	1	0	0	0
Pancreas	(13)	(33)	(15)	(29)	(14)	(35)	(11)	(37)
Within normal limits	10	24	11	21	7	26	10	28
Acinar atrophy	2	4	3	5	4	4	1	6
minimal	0	0	1	0	1	0	1	0
mild	1	2	0	3	2	2	0	5
moderate	1	1	2	1	1	2	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01654

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Pancreas (continued)								
Acinar atrophy								
marked	0	1	0	1	0	0	0	0
Hyperplasia, acinar cell	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Hyperplasia, islet cell	0	2	0	3	1	2	0	0
mild	0	0	0	1	0	0	0	0
moderate	0	2	0	2	1	2	0	0
Pancreatitis, chronic	0	0	0	0	0	1	0	0
marked	0	0	0	0	0	1	0	0
Polyarteritis	0	4	0	0	1	0	0	2
mild	0	0	0	0	1	0	0	0
moderate	0	2	0	0	0	0	0	2
marked	0	2	0	0	0	0	0	0
Parathyroid	(6)	(16)	(13)	(16)	(9)	(18)	(9)	(26)
Within normal limits	6	16	12	13	6	17	9	26
Fibrosis	0	0	0	0	1	0	0	0
moderate	0	0	0	0	1	0	0	0
Hyperplasia	0	0	1	2	2	0	0	0
mild	0	0	1	1	0	0	0	0
moderate	0	0	0	1	1	0	0	0
marked	0	0	0	0	1	0	0	0
Pituitary	(15)	(33)	(17)	(30)	(15)	(33)	(11)	(35)
Within normal limits	7	18	13	12	4	14	4	15
Cyst	2	2	0	2	0	1	1	2
Hyperplasia	0	2	0	0	0	0	0	2
mild	0	2	0	0	0	0	0	2
Preputial Gland	(0)	(0)	(1)	(0)	(0)	(1)	(0)	(0)
Preputial adenitis, acute	0	0	1	0	0	1	0	0
moderate	0	0	0	0	0	1	0	0
marked	0	0	1	0	0	0	0	0
Prostate	(13)	(33)	(15)	(31)	(12)	(35)	(11)	(33)
Within normal limits	10	27	13	29	9	25	9	34
Edema	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Hyperplasia	0	0	0	1	0	0	0	2
moderate	0	0	0	1	0	0	0	2
Prostatitis, acute	3	6	2	1	3	8	2	2
minimal	0	0	0	1	0	1	0	0
mild	1	2	1	0	1	1	0	1
moderate	1	3	0	0	1	3	0	1
marked	1	1	1	0	1	3	2	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Table: 7

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Prostate (continued)								
Prostatitis, chronic	0	0	0	0	0	1	0	0
marked	0	0	0	0	0	1	0	0
Salivary Gland	(12)	(32)	(15)	(30)	(13)	(33)	(10)	(32)
Within normal limits	12	31	14	30	12	33	10	32
Atrophy	0	0	0	0	1	0	0	0
Sialadenitis, chronic	0	1	0	0	0	0	0	0
minimal	0	1	0	0	0	0	0	0
Skin	(8)	(7)	(3)	(3)	(6)	(10)	(1)	(6)
Atrophy	0	0	0	0	1	0	0	0
moderate	0	0	0	0	1	0	0	0
Cyst, dermal inclusion	0	0	0	0	0	0	0	1
Dermatitis, chronic	0	0	0	0	1	0	0	0
mild	0	0	0	0	1	0	0	0
Pododermatitis, ulcerative	3	5	2	2	4	9	1	4
marked	3	5	2	2	4	9	1	4
Ulcer	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Small Intestine	(14)	(34)	(17)	(31)	(0)	(1)	(0)	(0)
Within normal limits	13	32	17	31	0	1	0	0
Polyarteritis	0	2	0	0	0	0	0	0
moderate	0	1	0	0	0	0	0	0
marked	0	1	0	0	0	0	0	0
Spinal Cord	(15)	(32)	(19)	(31)	(0)	(0)	(0)	(0)
Within normal limits	15	32	19	31	0	0	0	0
Spleen	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(30)
Within normal limits	6	20	5	18	9	23	7	35
Atrophy	0	0	3	0	0	0	0	0
mild	0	0	2	0	0	0	0	0
moderate	0	0	1	0	0	0	0	0
Fibrosis	0	1	0	0	0	0	0	0
moderate	0	1	0	0	0	0	0	0
Hematopoiesis, extramedullary, increased	4	0	3	0	0	2	2	0
mild	2	0	2	0	0	1	1	0
moderate	1	0	0	0	0	1	1	0
marked	1	0	1	0	0	0	0	0
Hemosiderosis	5	11	10	13	5	4	3	3
minimal	0	0	0	0	0	1	0	0
mild	5	11	9	13	4	3	1	3
moderate	0	0	1	0	1	0	2	0
Necrosis	0	1	0	0	0	0	0	0
moderate	0	1	0	0	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01656

Non-Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 7

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Stomach	(16)	(33)	(19)	(31)	(15)	(35)	(11)	(37)
Within normal limits	11	33	15	31	12	33	10	36
Edema	3	0	2	0	1	0	0	0
moderate	2	0	2	0	1	0	0	0
marked	1	0	0	0	0	0	0	0
Gastritis, acute	0	0	0	0	0	1	0	0
moderate	0	0	0	0	0	1	0	0
Mineralization	0	0	0	0	1	0	0	0
mild	0	0	0	0	1	0	0	0
Necrosis	0	0	2	0	0	0	0	0
moderate	0	0	2	0	0	0	0	0
Ulcer	1	0	0	0	1	1	1	1
moderate	0	0	0	0	1	0	0	0
marked	1	0	0	0	0	0	1	0
Testis/Epididymis	(15)	(33)	(19)	(31)	(14)	(35)	(12)	(38)
Within normal limits	13	25	13	23	9	31	10	24
Leydig cell hyperplasia	0	0	1	0	0	0	0	0
minimal	0	0	1	0	0	0	0	0
Mineralization	0	1	0	1	0	0	0	0
mild	0	1	0	1	0	0	0	0
Polyarteritis	1	5	0	2	2	0	0	4
minimal	0	0	0	0	0	0	0	1
mild	1	1	0	1	1	0	0	2
moderate	0	1	0	0	1	0	0	1
marked	0	3	0	1	0	0	0	0
Tubule atrophy, aspermatogenesis	3	4	3	3	4	2	1	3
minimal	0	0	1	0	0	0	0	0
mild	1	1	0	1	1	0	0	0
moderate	1	1	0	2	2	1	1	0
marked	1	2	2	0	1	1	0	3
Vascular mineralization	0	0	3	3	0	2	1	6
minimal	0	0	2	1	0	0	0	2
mild	0	0	1	2	0	2	1	3
moderate	0	0	0	0	0	0	0	1
Thyroid	(12)	(31)	(18)	(27)	(15)	(33)	(10)	(36)
Within normal limits	11	25	12	22	13	24	8	29
Cyst, colloid	0	1	1	1	0	3	0	0
mild	0	1	0	0	0	0	0	0
Follicular hyperplasia, cystic	0	1	0	2	1	0	0	1
mild	0	0	0	1	1	0	0	0
moderate	0	1	0	0	0	0	0	0
marked	0	0	0	1	0	0	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01657

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Thyroid (continued)								
Hyperplasia, C cell	0	1	2	2	0	3	0	2
mild	0	1	2	2	0	3	0	1
moderate	0	0	0	0	0	0	0	1
Hyperplasia, follicular cell	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Ultimobranchial cyst	1	1	1	1	2	4	1	1
Trachea	(15)	(34)	(18)	(29)	(15)	(35)	(11)	(37)
Within normal limits	15	34	18	24	15	27	11	30
Cyst	0	0	0	3	0	1	0	0
Tracheitis, acute	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Tracheitis, chronic	0	0	0	2	0	5	0	7
mild	0	0	0	2	0	5	0	5
moderate	0	0	0	0	0	1	0	2
Urinary Bladder	(13)	(33)	(18)	(30)	(13)	(34)	(11)	(38)
Within normal limits	10	32	14	30	11	30	9	37
Calculus	0	0	0	0	0	1	1	0
Cystitis, acute	1	0	2	0	1	2	0	0
mild	0	0	1	0	0	1	0	0
moderate	1	0	0	0	1	0	0	0
marked	0	0	1	0	0	1	0	0
Cystitis, chronic	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Epithelial hyperplasia, papillary	0	0	1	0	0	0	0	0
marked	0	0	1	0	0	0	0	0
Epithelial hyperplasia, simple	2	1	2	0	2	4	1	0
mild	2	1	2	0	1	1	1	0
moderate	0	0	0	0	1	2	0	0
marked	0	0	0	0	0	1	0	0
Hemorrhage	1	0	1	0	0	0	0	0
mild	0	0	1	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Ulcer	0	0	0	0	0	1	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001658

Non-Neoplastic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 3

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal	(25)	(25)	(15)	(34)	(26)	(23)	(27)	(22)
Within normal limits	2	0	4	6	2	2	9	1
Cortical atrophy	0	0	1	1	1	0	0	0
moderate	0	0	1	1	0	0	0	0
marked	0	0	0	0	1	0	0	0
Cortical degeneration	2	5	0	0	3	6	2	2
mild	1	0	0	0	1	3	1	0
moderate	1	3	0	0	2	3	1	1
marked	0	2	0	0	0	0	0	1
Cortical vacuolation	3	2	5	6	5	2	4	1
minimal	0	0	0	0	1	0	0	0
mild	2	1	4	5	2	1	3	1
moderate	1	1	1	0	2	1	1	0
marked	0	0	0	1	0	0	0	0
Hematopoiesis, extramedullary	4	0	0	0	2	0	1	0
minimal	0	0	0	0	0	0	1	0
mild	3	0	0	0	1	0	0	0
moderate	1	0	0	0	1	0	0	0
Medullary cell hyperplasia	1	2	0	1	0	1	0	0
mild	1	2	0	1	0	1	0	0
Necrosis	3	0	0	0	1	0	0	0
moderate	1	0	0	0	0	0	0	0
marked	2	0	0	0	1	0	0	0
Nodular hyperplasia, cortex	0	0	1	0	1	1	0	0
mild	0	0	1	0	1	0	0	0
moderate	0	0	0	0	0	1	0	0
Pigment, brown	0	0	0	1	0	0	0	0
mild	0	0	0	1	0	0	0	0
Sinusoidal ectasia, cortex	19	23	8	26	20	19	15	21
minimal	0	1	1	1	2	1	0	0
mild	8	4	2	12	5	4	5	6
moderate	5	8	4	4	8	5	7	6
marked	5	9	1	9	5	9	3	9
Aorta	(21)	(23)	(14)	(33)	(0)	(0)	(0)	(0)
Within normal limits	17	23	14	33	0	0	0	0
Mineralization	2	0	0	0	0	0	0	0
mild	2	0	0	0	0	0	0	0
Bone	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)
Arthritis, synovitis; joints	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Non-Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 8

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Bone Marrow	(25)	(25)	(16)	(34)	(0)	(0)	(0)	(0)
Within normal limits	23	25	16	34	0	0	0	0
Brain	(25)	(25)	(16)	(34)	(3)	(0)	(1)	(1)
Within normal limits	25	24	16	34	3	0	1	1
Clitoral Gland	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(1)
Cyst	0	0	0	0	0	0	1	1
moderate	0	0	0	0	0	0	0	1
Inflammation, chronic	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Esophagus	(15)	(21)	(13)	(30)	(25)	(20)	(24)	(21)
Within normal limits	14	21	13	30	25	20	24	21
Eye	(20)	(23)	(12)	(34)	(2)	(2)	(2)	(2)
Within normal limits	17	21	11	30	2	1	1	2
Cataract	1	0	0	1	0	1	0	0
Keratitis, acute	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Keratitis, chronic	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Panophthalmitis	0	1	0	1	0	0	0	0
marked	0	1	0	1	0	0	0	0
Phthsis bulbi	0	1	1	0	0	0	0	0
moderate	0	1	0	0	0	0	0	0
Retinal atrophy	0	0	0	3	0	1	0	0
mild	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0
marked	0	0	0	1	0	1	0	0
Heart	(25)	(25)	(16)	(34)	(27)	(23)	(23)	(22)
Within normal limits	19	14	15	31	22	17	22	15
Endocarditis, chronic	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Myocardial fibrosis	0	2	0	1	2	3	1	2
mild	0	2	0	0	2	3	1	1
moderate	0	0	0	1	0	0	0	1
Myocarditis, chronic nonsuppurative	6	10	0	2	2	5	4	5
minimal	0	0	0	2	1	1	2	2
mild	4	10	0	0	1	4	2	3
moderate	2	0	0	0	0	0	0	0
Pericarditis, chronic	0	0	0	0	1	0	0	0
moderate	0	0	0	0	1	0	0	0
Kidney	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Within normal limits	3	3	4	4	5	3	6	5

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney (continued)								
Calculus	0	0	1	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Chronic progressive nephropathy	12	13	1	17	14	12	10	12
minimal	3	4	0	4	7	5	4	4
mild	5	10	0	12	5	5	6	6
moderate	2	3	0	1	2	1	0	1
marked	2	1	1	0	0	1	0	1
Cyst	2	1	0	0	0	0	0	0
moderate	2	0	0	0	0	0	0	0
Hematopoiesis, extramedullary	0	0	0	0	2	0	1	0
mild	0	0	0	0	1	0	1	0
moderate	0	0	0	0	1	0	0	0
Hydronephrosis	1	0	0	0	0	0	0	1
moderate	1	0	0	0	0	0	0	0
Hyperplasia, pelvic epithelium	4	1	0	1	2	1	3	0
mild	4	1	0	1	1	1	3	0
moderate	0	0	0	0	1	0	0	0
Mineralization	2	0	0	0	0	0	0	0
mild	2	0	0	0	0	0	0	0
Nephritis, acute	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Nephrosis	7	0	0	0	2	1	1	1
mild	1	0	0	0	1	0	0	0
moderate	3	0	0	0	1	0	1	0
marked	2	0	0	0	0	1	0	1
Pelvic mineralization	14	16	10	23	12	12	13	10
minimal	4	6	8	10	5	4	5	2
mild	8	8	1	9	6	6	6	7
moderate	1	2	1	2	1	2	1	1
marked	1	0	0	2	0	0	1	0
Pigment, conv. tub. epithelium	0	0	0	5	0	0	1	0
minimal	0	0	0	1	0	0	0	0
mild	0	0	0	4	0	0	1	0
Polyarteritis	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0
Protein resorption droplets	0	0	1	0	0	0	4	0
mild	0	0	0	0	0	0	1	0
moderate	0	0	1	0	0	0	0	0
marked	0	0	0	0	0	0	3	0
Pyelitis, acute	0	0	1	0	1	1	1	1
minimal	0	0	0	0	1	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C01661

Non-Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 8

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney (continued)								
Pyelitis, acute								
mild	0	0	1	0	0	1	1	1
Pyelonephritis, acute	1	0	0	0	1	0	0	0
moderate	1	0	0	0	0	0	0	0
marked	0	0	0	0	1	0	0	0
Vacuolation, conv. tub. epithelium	1	0	5	0	0	0	1	0
minimal	0	0	2	0	0	0	0	0
mild	0	0	2	0	0	0	1	0
moderate	1	0	1	0	0	0	0	0
Large Intestine	(24)	(23)	(14)	(34)	(1)	(0)	(3)	(0)
Within normal limits	22	22	13	31	1	0	2	0
Nematodiasis	1	1	0	3	0	0	0	0
Liver	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Within normal limits	1	0	0	0	4	2	4	1
Cystoid degeneration	0	0	0	4	0	0	0	0
mild	0	0	0	4	0	0	0	0
Hematopoiesis, extramedullary	3	0	1	2	8	2	1	3
minimal	0	0	0	0	4	2	0	3
mild	3	0	1	2	3	0	0	0
moderate	0	0	0	0	1	0	0	0
Hepatocyte alteration, basophilic	1	7	0	2	0	1	3	5
minimal	0	0	0	0	0	1	0	2
mild	1	5	0	2	0	0	2	2
moderate	0	2	0	0	0	0	1	1
Hepatocyte alteration, eosinophilic	1	2	0	0	0	0	0	0
mild	0	2	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Hepatocyte alteration, vacuolated	2	11	0	6	0	6	0	6
mild	2	11	0	6	0	6	0	6
Hepatocyte vacuolation	15	15	12	29	11	14	15	12
minimal	1	1	1	0	2	5	0	1
mild	9	13	4	18	7	8	8	10
moderate	3	1	6	10	1	1	5	1
marked	2	0	1	1	1	0	2	0
Hyperplastic nodule	0	1	2	7	0	0	0	0
Megalocytosis	0	0	11	33	0	1	0	0
minimal	0	0	0	1	0	0	0	0
mild	0	0	8	17	0	1	0	0
moderate	0	0	3	13	0	0	0	0
marked	0	0	0	2	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Table:

Project Number: 82010R0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver (continued)								
Mitotic activity, increased	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Necrosis	4	1	4	0	5	1	5	0
minimal	0	0	0	0	1	0	1	0
mild	1	1	4	0	1	1	2	0
moderate	1	0	0	0	2	0	2	0
marked	2	0	0	0	1	0	0	0
Pigment, brown	0	0	0	2	1	0	0	0
minimal	0	0	0	1	0	0	0	0
mild	0	0	0	1	1	0	0	0
Pigment, hepatocyte	0	0	0	2	0	0	0	0
minimal	0	0	0	1	0	0	0	0
mild	0	0	0	1	0	0	0	0
Portal bile duct proliferation	3	13	3	14	0	9	0	7
minimal	0	0	0	1	3	2	0	2
mild	3	12	3	13	4	7	5	5
moderate	0	1	0	0	1	0	1	0
marked	1	0	0	0	0	0	0	0
Portal mononuclear cell infiltrate	10	0	2	15	0	11	0	0
minimal	1	0	1	4	2	2	0	0
mild	9	0	1	12	0	9	0	0
moderate	1	0	0	0	0	0	0	0
Telangiectasis	1	0	0	0	0	0	0	0
mild	1	0	0	0	0	0	0	0
Lung	(25)	(25)	(16)	(30)	(27)	(23)	(20)	(22)
Within normal limits	2	3	0	2	2	0	1	1
Abscess	1	0	0	0	0	0	0	0
Alveolar macrophages	5	0	10	17	5	10	0	0
minimal	1	0	1	0	0	1	0	0
mild	4	0	7	12	5	9	0	1
moderate	0	0	2	5	0	0	0	0
Atelectasis	0	0	0	0	0	0	1	0
mild	0	0	0	0	0	0	1	0
Cyst	0	0	0	0	0	0	0	1
Edema	0	0	0	0	1	0	0	0
mild	0	0	0	0	1	0	0	0
moderate	0	0	0	0	0	0	0	0
Granuloma	0	0	0	0	0	1	2	1
minimal	0	0	0	0	0	1	1	0
mild	0	0	0	0	0	0	1	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001663

Table: 8

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung (continued)								
Hemorrhage	9	5	5	9	9	5	8	3
mild	8	3	4	7	6	4	5	0
moderate	1	1	0	2	2	0	2	3
marked	0	1	1	0	1	1	1	0
Hyperplasia, septal cell	0	0	0	0	1	0	0	1
mild	0	0	0	0	1	0	0	1
Mineralization	0	0	0	0	0	1	0	0
mild	0	0	0	0	0	1	0	0
Pelvic mineralization	0	0	1	0	0	0	0	0
mild	0	0	1	0	0	0	0	0
Perivascular mononuclear infiltrate	4	9	4	15	5	5	6	3
minimal	0	1	1	1	0	1	0	1
mild	4	7	3	13	5	4	5	2
moderate	0	1	0	1	0	0	1	0
Pigment	0	1	0	0	0	0	0	0
moderate	0	1	0	0	0	0	0	0
Pleuritis, chronic	0	0	0	0	1	0	0	0
moderate	0	0	0	0	1	0	0	0
Pneumonia, acute exudative	1	0	2	0	1	0	0	0
mild	0	0	2	0	1	0	0	0
moderate	1	0	0	0	0	0	0	0
Pneumonia, bronchopneumonia	0	0	0	0	0	0	1	0
moderate	0	0	0	0	0	0	1	0
Pneumonia, interstitial, chronic	4	3	2	7	2	4	3	7
minimal	0	0	0	1	0	0	0	0
mild	4	3	2	6	2	4	2	7
moderate	0	0	0	0	0	0	1	0
Thrombus	0	0	0	0	0	0	1	0
moderate	0	0	0	0	0	0	1	0
Vascular mineralization	12	10	13	26	23	19	23	17
minimal	0	0	0	0	2	2	2	1
mild	12	10	13	25	21	17	21	16
Lymph Node (mesenteric)	(19)	(23)	(9)	(29)	(8)	(3)	(1)	(0)
Within normal limits	14	22	8	24	7	2	0	0
Hemorrhage	2	1	1	3	0	0	0	0
mild	1	1	1	1	0	0	0	0
moderate	1	0	0	2	0	0	0	0
Polyarteritis	0	0	0	2	0	0	0	0
mild	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001664

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node (mesenteric) (continued)								
Sinusoidal ectasia	1	0	0	0	0	1	0	0
moderate	1	0	0	0	0	1	0	0
Mammary Gland	(23)	(23)	(14)	(33)	(23)	(23)	(25)	(22)
Within normal limits	4	9	10	19	10	10	14	9
Galactocele	5	4	0	3	2	3	3	3
Lobular hyperplasia	4	3	0	1	2	1	2	2
moderate	1	0	0	0	0	0	0	0
Ovary	(25)	(23)	(14)	(34)	(25)	(23)	(26)	(21)
Within normal limits	19	17	12	14	19	12	23	13
Cyst	3	3	0	5	2	3	1	5
Tubular hyperplasia	0	0	2	13	4	7	1	5
mild	0	0	2	6	4	3	0	3
moderate	0	0	0	7	0	2	1	2
marked	0	0	0	0	0	2	0	0
Pancreas	(24)	(25)	(14)	(34)	(17)	(17)	(21)	(20)
Within normal limits	22	15	12	30	15	13	19	15
Acinar atrophy	0	6	1	3	1	3	0	2
minimal	0	1	0	0	0	0	0	0
mild	0	2	0	3	1	2	0	0
moderate	0	3	1	0	0	0	0	2
marked	0	0	0	0	0	1	0	0
Cyst	0	1	0	0	0	0	0	0
Hyperplasia, islet cell	0	0	1	0	0	0	0	1
mild	0	0	1	0	0	0	0	1
Polyarteritis	0	0	0	0	0	0	0	1
marked	0	0	0	0	0	0	0	1
Parathyroid	(5)	(0)	(6)	(23)	(16)	(15)	(19)	(18)
Within normal limits	5	0	6	20	16	15	19	18
Hyperplasia	0	0	0	1	0	0	0	0
mild	0	0	0	1	0	0	0	0
Sinusoidal ectasia	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0
Pituitary	(22)	(24)	(15)	(34)	(23)	(21)	(25)	(21)
Within normal limits	5	7	3	10	3	4	5	6
Hemorrhage	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Necrosis	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Pigment, brown	0	0	0	1	0	0	0	0
moderate	0	0	0	1	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Non-Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 8

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Salivary Gland	(19)	(24)	(13)	(33)	(19)	(20)	(20)	(20)
Within normal limits	18	24	13	32	18	19	20	20
Hemorrhage	0	0	0	0	1	0	0	0
Sialadenitis, chronic	1	0	0	1	0	1	0	0
mild	0	0	0	0	0	1	0	0
moderate	1	0	0	1	0	0	0	0
Skin	(3)	(3)	(0)	(2)	(5)	(4)	(5)	(1)
Within normal limits	0	0	0	1	0	2	3	1
Acanthosis	0	1	0	0	0	0	0	0
mild	0	1	0	0	0	0	0	0
Pododermatitis, ulcerative	0	0	0	1	1	1	0	0
marked	0	0	0	1	1	1	0	0
Ulcer	2	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
marked	1	0	0	0	0	0	0	0
Small Intestine	(24)	(25)	(14)	(34)	(1)	(0)	(1)	(0)
Within normal limits	24	25	14	33	1	0	0	0
Ulcer	0	0	0	1	0	0	0	0
Spinal Cord	(25)	(23)	(15)	(34)	(0)	(0)	(0)	(0)
Within normal limits	23	23	15	34	0	0	0	0
Malacia	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Spleen	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Within normal limits	4	11	8	20	9	20	7	17
Hematopoiesis, extramedullary, increased	7	2	2	0	10	1	4	4
minimal	0	0	0	0	0	0	0	1
mild	1	1	0	0	1	1	1	2
moderate	4	1	2	0	3	0	2	1
marked	2	0	0	0	6	0	1	0
Hemosiderosis	12	13	6	14	8	2	15	1
mild	8	13	2	11	3	2	8	1
moderate	4	0	3	3	5	0	6	0
marked	0	0	1	0	0	0	1	0
Stomach	(25)	(25)	(16)	(34)	(26)	(23)	(28)	(22)
Within normal limits	20	25	13	34	21	23	26	21
Edema	0	0	0	0	2	0	0	0
moderate	0	0	0	0	2	0	0	0
Gastritis, acute	0	0	2	0	1	0	1	0
moderate	0	0	2	0	1	0	0	0
Granuloma	0	0	0	0	1	0	0	0
minimal	0	0	0	0	1	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001666

Table: 8

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Stomach (continued)								
Hemorrhage	1	0	0	0	0	0	0	0
moderate	1	0	0	0	0	0	0	0
Mineralization	1	0	0	0	0	0	0	0
mild	1	0	0	0	0	0	0	0
Necrosis	2	0	1	0	1	0	0	0
mild	1	0	0	0	1	0	0	0
moderate	1	0	1	0	0	0	0	0
Ulcer	1	0	0	0	2	0	0	1
marked	0	0	0	0	0	0	0	1
Thyroid	(25)	(25)	(13)	(33)	(20)	(18)	(23)	(22)
Within normal limits	20	23	12	27	18	12	19	17
Follicular hyperplasia, cystic	1	0	0	1	0	0	0	0
mild	1	0	0	0	0	0	0	0
marked	0	0	0	1	0	0	0	0
Hyperplasia, C cell	0	0	1	3	1	3	0	0
minimal	0	0	0	0	0	1	0	0
mild	0	0	0	2	1	2	0	0
moderate	0	0	1	1	0	0	0	0
Ultimobranchial cyst	2	1	0	0	1	1	3	4
Trachea	(25)	(25)	(14)	(34)	(25)	(21)	(24)	(22)
Within normal limits	25	25	14	34	25	21	24	22
Urinary Bladder	(25)	(25)	(13)	(34)	(23)	(21)	(25)	(22)
Within normal limits	17	25	12	33	20	21	21	22
Calculus	1	0	0	0	0	0	0	0
Cystitis, chronic	0	0	0	0	0	0	1	0
marked	0	0	0	0	0	0	1	0
Epithelial hyperplasia, papillary	1	0	0	0	0	0	1	0
marked	1	0	0	0	0	0	1	0
Epithelial hyperplasia, simple	7	0	1	1	2	0	0	0
mild	6	0	1	1	2	0	0	0
moderate	1	0	0	0	0	0	0	0
Uterus	(25)	(25)	(14)	(34)	(24)	(23)	(26)	(22)
Within normal limits	21	17	11	20	17	18	22	11
Cystic glands	2	5	2	12	3	3	3	5
minimal	0	0	0	1	0	0	0	0
mild	0	1	1	5	1	0	0	2
moderate	2	1	1	4	2	2	0	2
marked	0	3	0	1	0	1	3	1
Exudate, lumenal	0	0	1	0	0	0	0	0
moderate	0	0	1	0	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

Non-Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 8

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Uterus (continued)								
Hydrometra	0	1	0	1	0	0	1	1
moderate	0	0	0	1	0	0	0	0
marked	0	1	0	0	0	0	1	1
Hyperplasia, endometrial	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1
Inflammation, acute	0	0	0	0	1	0	0	0
marked	0	0	0	0	1	0	0	0
Metritis, acute	0	0	0	0	0	0	0	1
mild	0	0	0	0	0	0	0	1
Polyarteritis	0	0	0	0	0	0	0	1
moderate	0	0	0	0	0	0	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001668

Neoplastic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim

Table: 9

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Mammary Gland	(3)	(1)
Adenocarcinoma	0	1
Pituitary	(14)	(13)
Adenoma	0	1

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

Neoplastic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim
Table: 10

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1	Group 2
Mammary Gland	(15)	(15)
Adenocarcinoma	0	1
Pituitary	(15)	(15)
Adenoma	1	2

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm

() = Total Examined

001670

Neoplastic Incidence for Males
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 11

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal	(15)	(34)	(19)	(31)	(14)	(35)	(12)	(38)
Carcinoma, cortical	0	1	0	1	0	0	0	0
Pheochromocytoma, benign	1	1	0	0	1	3	1	3
Pheochromocytoma, malignant	0	0	0	0	0	0	0	1
Hemolymphoreticular neoplasm present	0	0	1	0	0	0	0	0
Bone	(0)	(2)	(1)	(1)	(0)	(0)	(1)	(0)
Osteosarcoma	0	0	1	0	0	0	0	0
Brain	(16)	(34)	(18)	(31)	(0)	(0)	(0)	(0)
Astrocytoma, benign	0	1	0	1	0	0	0	0
Oligodendroglioma, benign	1	0	0	0	0	0	0	0
Hemolymphoreticular neoplasm present	0	0	1	0	0	0	0	0
Eye	(12)	(33)	(17)	(31)	(1)	(1)	(1)	(4)
Hemolymphoreticular neoplasm present	0	0	1	0	0	0	0	0
Heart	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Hemolymphoreticular neoplasm present	1	0	2	0	1	0	0	0
Kidney	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Adenoma	0	0	0	0	0	0	0	1
Hemolymphoreticular neoplasm present	1	0	1	0	1	0	1	0
Liver	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Hepatocellular carcinoma	2	1	1	1	0	1	1	0
Hemolymphoreticular neoplasm present	2	1	2	0	1	1	1	0
Lung	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Adenoma	0	0	0	1	0	0	0	0
Hemolymphoreticular neoplasm present	3	1	2	0	1	1	1	0
Lymph Node (abdominal)	(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Hemolymphoreticular neoplasm present	0	0	0	0	0	1	0	0
Lymph Node (mesenteric)	(12)	(33)	(13)	(29)	(1)	(1)	(0)	(1)
Hemangiosarcoma	0	0	0	0	0	0	0	1
Hemolymphoreticular neoplasm present	1	0	1	0	1	0	0	0
Pancreas	(13)	(33)	(15)	(29)	(14)	(35)	(11)	(37)
Adenoma	0	0	1	0	0	0	0	0
Islet cell adenoma	0	1	1	1	1	2	0	1
Islet cell carcinoma	0	0	0	1	0	0	0	0
Hemolymphoreticular neoplasm present	1	0	1	0	1	0	0	0
Parathyroid	(6)	(16)	(13)	(16)	(9)	(13)	(9)	(26)
Adenoma	0	0	0	1	0	1	0	0
Pituitary	(15)	(33)	(17)	(30)	(15)	(33)	(11)	(36)
Adenoma	6	11	4	16	11	18	6	16
Salivary Gland	(12)	(32)	(15)	(30)	(13)	(33)	(10)	(32)
Hemolymphoreticular neoplasm present	0	0	1	0	0	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001671

Neoplastic Incidence for Males (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 11

Project Number: 0231CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Skin	(8)	(7)	(3)	(3)	(6)	(10)	(1)	(5)
Basal cell tumor, benign	0	0	0	0	0	1	0	0
Fibroma	1	0	0	1	0	1	0	1
Fibrosarcoma	1	0	1	0	0	0	0	0
Keratoacanthoma	1	2	0	0	0	0	0	0
Liposarcoma	1	0	0	0	0	0	0	0
Papilloma	0	1	0	0	0	0	0	0
Squamous cell carcinoma	0	0	0	0	1	0	0	0
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	1	0
Small Intestine	(14)	(34)	(17)	(31)	(0)	(1)	(0)	(0)
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Soft Tissues (head)	(0)	(0)	(2)	(0)	(0)	(0)	(0)	(0)
Hemangiosarcoma	0	0	1	0	0	0	0	0
Zymbal gland carcinoma	0	0	1	0	0	0	0	0
Soft Tissues (neck)	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(1)
Fibroma	0	0	0	0	0	0	0	1
Fibrosarcoma	0	0	0	0	0	0	1	0
Soft Tissues (thorax)	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(0)
Liposarcoma	0	0	0	0	0	0	1	0
Spleen	(16)	(34)	(19)	(31)	(15)	(35)	(12)	(38)
Hemangiosarcoma	0	1	0	0	0	0	0	0
Hemolymphoreticular neoplasm present	1	1	1	0	1	1	0	0
Stomach	(16)	(33)	(19)	(31)	(15)	(35)	(11)	(37)
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Testis/Epididymis	(16)	(33)	(19)	(31)	(14)	(35)	(12)	(38)
Mesothelioma, benign	0	0	0	0	0	0	0	1
Thymus	(1)	(0)	(1)	(0)	(0)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	1	0	1	0	0	0	0	0
Thyroid	(12)	(31)	(18)	(27)	(15)	(33)	(10)	(36)
C cell adenoma	0	0	1	0	0	2	0	3
C cell carcinoma	0	2	1	0	0	1	0	0
Follicular adenoma	0	0	0	0	0	1	0	0
Urinary Bladder	(13)	(33)	(18)	(30)	(13)	(34)	(11)	(38)
Papilloma	0	0	0	0	0	0	0	1
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Hemolymphoreticular System [# affected]	[3]	[1]	[3]	[0]	[1]	[1]	[1]	[0]
Malignant lymphoma, lymphocytic	0	0	2	0	0	0	0	0
Malignant lymphoma, histiocytic	3	1	1	0	0	1	1	0
Malignant lymphoma, mixed	0	0	0	0	1	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001672

Neoplastic Incidence for Females
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 12

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal	(25)	(25)	(15)	(34)	(26)	(23)	(27)	(22)
Adenoma	0	0	0	0	0	0	0	1
Adenoma, cortical	0	0	0	0	1	0	0	0
Carcinoma, cortical	0	0	0	0	1	0	0	0
Pheochromocytoma, benign	0	2	0	1	0	0	1	0
Pheochromocytoma, malignant	0	0	0	0	0	1	0	0
Hemolymphoreticular neoplasm present	2	0	1	0	1	0	2	0
Aorta	(21)	(23)	(14)	(33)	(0)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	2	0	0	0	0	0	0	0
Bone Marrow	(25)	(25)	(16)	(34)	(0)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	2	0	0	0	0	0	0	0
Brain	(25)	(25)	(16)	(34)	(3)	(0)	(1)	(1)
Oligodendroglioma, benign	0	1	0	0	0	0	0	0
Esophagus	(15)	(21)	(13)	(30)	(25)	(20)	(24)	(21)
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Eye	(20)	(23)	(12)	(34)	(2)	(2)	(2)	(2)
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Heart	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Hemolymphoreticular neoplasm present	1	0	1	0	0	0	1	0
Kidney	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Hemolymphoreticular neoplasm present	3	0	1	0	0	0	2	0
Large Intestine	(24)	(23)	(14)	(34)	(1)	(0)	(3)	(0)
Leiomyosarcoma	0	0	1	0	0	0	0	0
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	1	0
Liver	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Hepatocellular adenoma	0	0	0	4	0	0	0	0
Hepatocellular carcinoma	0	0	1	2	0	0	0	0
Hemolymphoreticular neoplasm present	5	0	1	0	0	0	4	0
Lung	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Hemolymphoreticular neoplasm present	5	0	1	0	0	0	3	0
Lymph Node (mesenteric)	(19)	(23)	(9)	(29)	(8)	(3)	(1)	(0)
Hemolymphoreticular neoplasm present	3	0	0	0	1	0	1	0
Lymph Node (thoracic)	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	0	0	0	0	1	0	0	0
Mammary Gland	(23)	(23)	(14)	(33)	(23)	(23)	(25)	(22)
Adenocarcinoma	4	3	4	6	5	6	3	3
Adenoma	2	1	0	0	0	0	0	0
Carcinoma	0	1	0	0	0	0	0	0
Fibroadenoma	6	4	1	5	7	8	6	11
Hemolymphoreticular neoplasm present	2	0	0	0	0	0	1	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001673

Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 12

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Mesentary	(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Leiomyosarcoma	0	0	0	0	0	1	0	0
Ovary	(25)	(23)	(14)	(34)	(25)	(23)	(26)	(21)
Leiomyoma	1	0	0	0	0	0	0	0
Tubular adenoma	0	4	0	3	0	2	0	0
Hemolymphoreticular neoplasm present	2	0	0	0	0	0	1	0
Pancreas	(24)	(25)	(14)	(34)	(17)	(17)	(21)	(20)
Acinar adenoma	0	0	0	1	0	0	0	0
Islet cell adenoma	0	1	0	0	0	2	0	0
Islet cell carcinoma	0	1	0	0	0	0	0	0
Hemolymphoreticular neoplasm present	2	0	0	0	1	0	2	0
Parathyroid	(5)	(0)	(6)	(23)	(16)	(15)	(19)	(18)
Adenoma	0	0	0	1	0	0	0	0
Pituitary	(22)	(24)	(15)	(34)	(23)	(21)	(25)	(21)
Adenocarcinoma	0	0	0	0	0	1	0	0
Adenoma	16	17	12	23	20	16	20	15
Skin	(3)	(3)	(0)	(2)	(5)	(4)	(5)	(1)
Fibroma	1	2	0	0	3	0	0	0
Fibrosarcoma	0	0	0	0	1	0	0	0
Lipoma	0	0	0	0	1	1	0	0
Hemolymphoreticular neoplasm present	0	0	0	0	0	0	2	0
Small Intestine	(24)	(25)	(14)	(34)	(1)	(0)	(1)	(0)
Hemolymphoreticular neoplasm present	0	0	0	0	0	0	1	0
Soft Tissues (leg)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	0	0	1	0	0	0	0	0
Spinal Cord	(25)	(23)	(15)	(34)	(0)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	1	0	0	0	0	0	0	0
Spleen	(25)	(25)	(16)	(34)	(27)	(23)	(28)	(22)
Hemolymphoreticular neoplasm present	3	0	0	0	0	0	2	0
Stomach	(25)	(25)	(16)	(34)	(26)	(23)	(28)	(22)
Hemolymphoreticular neoplasm present	1	0	0	0	1	0	1	0
Thymus	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present	0	0	0	0	1	0	0	0
Thyroid	(25)	(25)	(13)	(33)	(20)	(18)	(23)	(22)
Adenocarcinoma	0	0	0	0	0	1	0	0
C cell adenoma	0	1	0	1	0	1	1	0
C cell carcinoma	0	0	1	1	0	1	0	1
Hemolymphoreticular neoplasm present	2	0	0	0	0	0	0	0
Urinary Bladder	(25)	(25)	(13)	(34)	(23)	(21)	(25)	(22)
Transitional cell carcinoma	0	0	0	0	0	0	1	0
Hemolymphoreticular neoplasm present	1	0	0	0	1	0	2	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

001674

Neoplastic Incidence for Females (continued)
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 12

Project Number: 0281CR0012 Species: Rat

Tissue/ Diagnosis/ Modifier	Group 1		Group 2		Group 3		Group 4	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Uterus	(25)	(25)	(14)	(34)	(24)	(23)	(26)	(22)
Adenoma	0	1	0	0	0	0	0	0
Hemangioma	0	0	0	0	1	0	0	0
Leiomyoma	0	0	0	0	0	0	0	1
Polyp	0	1	0	1	2	2	1	3
Hemolymphoreticular neoplasm present	2	0	0	0	1	0	0	0
Hemolymphoreticular System [# affected]	[5]	[0]	[1]	[0]	[3]	[0]	[4]	[0]
Malignant lymphoma, histiocytic	2	0	1	0	1	0	4	0
Malignant lymphoma, lymphocytic	3	0	0	0	0	0	0	0
Lymphosarcoma	0	0	0	0	2	0	0	0

Titles:
Group 1 CONTROL 0 ppm
Group 2 FM-3924 100 ppm
Group 3 FM-3924 30 ppm
Group 4 FM-3924 10 ppm

() = Total Examined
DOS= Unscheduled Death(s)
SAC= Protocol Scheduled Sacrifice(s)

C016675

Summarized Single Tabulated Animal Report
Individual Macroscopic and Microscopic Observations
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats - One Year Interim

Table: 1

Animal Number: 1R-3516 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Lung	-Vascular mineralization, minimal
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, missing
Small Intestine	-Within normal limits Fewer than protocol number
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Mammary Gland, Pituitary, Adrenal, Trachea, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-3517 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Mammary Gland, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3520 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, bilateral, moderate
Kidney	-Chronic progressive nephropathy, minimal

Species: Rat
Project Number: 0281CR0012

Animal Number: 1R-3520 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

Liver	-Hepatocyte alteration, vacuolated, focal, minimal
Lung	-Vascular mineralization, minimal
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3522 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Light (pale) tan in color.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, minimal
Lung	-Vascular mineralization, mild Hemorrhage, multifocal, mild Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Mammary Gland, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3527 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Hemorrhage, multifocal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine,

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Animal Number: 1R-3527 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3535 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Mesentary	-Area of fat necrosis, 2 x 3 x 0.5 cm.
Microscopic Observations:	
Lung	-Alveolar macrophages, multifocal, mild Atellectasis, focal, mild
Mesentary	-Necrosis, fat, marked Steatitis, chronic, moderate
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Liver, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Spleen.

Animal Number: 1R-3543 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, focal, minimal
Lung	-Vascular mineralization, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3546 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Nodular hyperplasia, cortex, unilateral, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, multifocal, mild
Lung	-Perivascular mononuclear infiltrate, mild
Stomach	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3550 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Kidney	-Bilateral hydronephrosis
Microscopic Observations:	
Heart	-Myocarditis, chronic nonsuppurative, focal, mild
Kidney	-Hydronephrosis, bilateral, moderate Calculus, pelvic
Liver	-Portal mononuclear cell infiltrate, mild
Lung	-Vascular mineralization, mild
Pancreas	-Acinar atrophy, focal, moderate Pancreatitis, chronic, focal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3551 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Liver	-Pale tan
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Pneumonia, interstitial, chronic, focal, mild Hemorrhage, multifocal, mild Hyperplasia, septal cell, focal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3559 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Pyelitis, acute, bilateral, minimal Nephritis, interstitial, chronic, focal, unilateral, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Hemorrhage, multifocal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3568 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Pancreas	-Pancreatitis, chronic, focal, mild Acinar atrophy, focal, mild
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-3568 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3570 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:
-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild
Lung	-Pneumonia, interstitial, chronic, focal, minimal Hemorrhage, multifocal, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3575 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Soft Tissues (leg)	-Swollen left hind foot at the hock joint.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Lung	-Vascular mineralization, minimal Alveolar macrophages, multifocal, mild Hemorrhage, focal, mild
Pituitary	-Cyst, pars distalis

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3580 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Kidney	-Dark cystic lesion, 0.4 cm dia., left.
Microscopic Observations:	
Bone Marrow	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild Cyst, cortical, unilateral
Lung	-Alveolar macrophages, multifocal, mild Pneumonia, interstitial, chronic, multifocal, mild
Pancreas	-Pancreatitis, chronic, focal, mild
Parathyroid	-Not examined, not in plane of section
Spinal Cord	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spleen, Liver, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4578 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Pelvic mineralization, minimal
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4582 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Mesentary	-Yellow nodular mass, 1 x 0.5 cm.
Microscopic Observations:	
Heart	-Myocarditis, chronic nonsuppurative, focal, minimal
Kidney	-Calculus, pelvic, unilateral

Animal Number: 1R-4582 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

Large Intestine	-Not examined, missing
Lung	-Pneumonia, interstitial, chronic, multifocal, mild
	Hemorrhage, local areas, mild
	Perivascular mononuclear infiltrate, mild
Mesentary	-Necrosis, fat, nodular, moderate
	Steatitis, chronic, moderate
Parathyroid	-Not examined, not in plane of section
Urinary Bladder	-Not examined, missing
Uterus	-Hyperplasia, glandular epithelium, mild
	Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Stomach, Small Intestine, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4585 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, focal, unilateral, mild
Kidney	-Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, minimal
Lung	-Vascular mineralization, mild
	Hemorrhage, multifocal, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4588 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Skin	-Hair loss, neck.
Adrenal	-Left enlarged
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked
	Cortical degeneration, unilateral, mild
Kidney	-Hyperplasia, pelvic epithelium, mild
	Calculus, pelvic, unilateral
	Cyst, medullary, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Hemorrhage, diffuse, moderate
Spinal Cord	-Not examined, missing
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Skin.

Animal Number: 1R-4589 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Pituitary	-Slightly enlarged
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4590 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Lung	-Hemorrhage, local areas, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4601 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Kidney	-Hydronephrosis, unilateral
Microscopic Observations:	
Kidney	-Hydronephrosis, unilateral, moderate Calculus, unilateral, mild
Liver	-Hepatocyte vacuolation, multifocal, minimal
Lung	-Hemorrhage, multifocal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4608 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Uterus	-Left horn cystic looking lesion, 1 x 0.6 cm.
Microscopic Observations:	
Liver	-Hepatocyte vacuolation, multifocal, minimal
Lung	-Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Not examined, missing
Uterus	-Cystic glands, focal, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4610 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Pituitary	-Slightly enlarged
Uterus	-Slightly enlarged
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Large Intestine	-Nematodiasis
Lung	-Alveolar macrophages, multifocal, mild
Pancreas	-Pancreatitis, chronic, focal, mild
Parathyroid	-Not examined, not in plane of section
Uterus	-Hyperplasia, glandular epithelium, mild Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Kidney, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4620 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Eye	-Atrophy, right eye.
Microscopic Observations:	
Eye	-Panophthalmitis, unilateral, marked Atrophy, unilateral, marked
Kidney	-Pelvic mineralization, minimal
Lung	-Hemorrhage, multifocal, mild
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4629 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Skin	-Hair loss, head, neck, face.
Microscopic Observations:	
Adrenal	-Cortical degeneration, focal, unilateral, mild

Animal Number: 1R-4629 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

Aorta	-Not examined, missing
Large Intestine	-Nematodiasis
Liver	-Portal bile duct proliferation, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Lung, Stomach, Small Intestine, Urinary Bladder, Uterus, Ovary, Mammary Gland, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Skin.

Animal Number: 1R-4630 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Possibly slightly pale in color.

Microscopic Observations:

Kidney	-Calculus, pelvic, unilateral, moderate
Liver	-Hepatocyte alteration, vacuolated, multifocal, mild
Lung	-Hemorrhage, multifocal, mild
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4631 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Pelvic mineralization, minimal
Lung	-Hemorrhage, local areas, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Liver, Heart, Stomach, Small Intestine,

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Animal Number: 1R-4631 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Large Intestine, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4632 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Pituitary	-Slightly enlarged with a dark red focus on surface.
Mammary Gland	-Small spherical mass, 1.2 cm dia., containing dark red fluid, left inguinal.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, focal, unilateral, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Hemorrhage, multifocal, mild
Mammary Gland	-Galactocele Chronic inflammation and hemorrhage in cysts.
Ovary	-Cyst, unilateral
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4640 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Liver	-Hepatocyte vacuolation, multifocal, minimal
Lung	-Hemorrhage, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3696 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, minimal Portal bile duct proliferation, minimal Hepatocyte vacuolation, local areas, moderate Megalocytosis, marked Most lobules filled with markedly enlarged hepatocytes. Cells enlarged by increase in volume of finely granular cytoplasm which displaces coarser organalles to cell membrane. In some lobules there is a gradient of decreased swelling from central to peripheral. Many enlarged cells have multiple vacuoles.
Parathyroid	-Not examined, not in plane of section
Stomach	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Lung, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3699 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, marked
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, missing
Pituitary	-Cyst, pars distalis
Spleen	-Hemosiderosis, mild
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-3699 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3711 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:
-No visible lesions.

Microscopic Observations:

Large Intestine	-Not examined, missing
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, marked
Lung	-Perivascular mononuclear infiltrate, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3714 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Slightly pale, tanish-yellow color.

Microscopic Observations:

Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, moderate Megalocytosis, marked Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3715 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, moderate
	Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
	Hemorrhage, diffuse, marked
Pituitary	-Not examined, missing
Salivary Gland	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-3720 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Eye	-Slight atrophy of right eye due to eye bleeding.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
	Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, multifocal, mild
Parathyroid	-Not examined, missing
Pituitary	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3721 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Eye	-Focal corneal opacity of right eye due to eye bleeding.
Skin	-Bilateral hair thinning, ventral abdomen and thigh.
Liver	-Pale tan in color.
Microscopic Observations:	
Eye	-Keratitis, acute, unilateral, marked
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, moderate Megalocytosis, marked Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
Pancreas	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Thyroid	-Follicular hyperplasia, cystic, unilateral, moderate
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland.

Animal Number: 1R-3722 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Liver	-Pale tan in color.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, minimal Hepatocyte vacuolation, centrilobular, moderate Megalocytosis, mild
Lung	-Vascular mineralization, minimal Hemorrhage, local areas, moderate
Lymph Node (mesenteric)	-Hemorrhage, mild Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-3722 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3727 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Liver	-Pale tan in color.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Hemorrhage, local areas, mild
Parathyroid	-Not examined, not in plane of section
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, local areas, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3732 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Megalocytosis, moderate
Lung	-Alveolar macrophages, multifocal, mild Pneumonia, interstitial, chronic, multifocal, mild Hemorrhage, multifocal, mild Perivascular mononuclear infiltrate, mild Atellectasis, focal, mild
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

Animal Number: 1R-3732 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3733 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Hemorrhage, local areas, moderate
Lymph Node (mesenteric)	-Not examined, missing
Salivary Gland	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Eye.

Animal Number: 1R-3736 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Soft Tissues (thorax)	-Subcutaneous mass at thoracic inlet, 1.2 cm dia.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, moderate
Lung	-Vascular mineralization, mild Alveolar macrophages, multifocal, mild
Mammary Gland	-Adenocarcinoma Large tumor from area of thoracic inlet. Highly anaplastic, most tumor cells in sheets, some areas of abortive duct formation. High mitotic activity. Local invasion.

Animal Number: 1R-3736 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Small Intestine.

Animal Number: 1R-3737 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Slightly tan in color.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, moderate Megalocytosis, moderate
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Spinal Cord	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3747 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, moderate Necrosis, multifocal, mild
Lung	-Hemorrhage, local areas, mild
Parathyroid	-Not examined, not in plane of section
Testis/Epididymis	-Vascular mineralization, mild

Animal Number: 1R-3747 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3748 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Pale tan in color.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, centrilobular, moderate
	Megalocytosis, mild
	Necrosis, focal, minimal
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, local areas, mild
	Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4757 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
Lung	-Hemorrhage, local areas, moderate
Parathyroid	-Not examined, not in plane of section
Uterus	-Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4760 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Hepatocyte vacuolation, multifocal, minimal Megalocytosis, mild
Lung	-Alveolar macrophages, multifocal, mild Perivascular mononuclear infiltrate, mild
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4761 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Large Intestine	-Nematodiasis
Liver	-Hepatocyte vacuolation, multifocal, minimal Megalocytosis, minimal
Lung	-Vascular mineralization, mild Alveolar macrophages, multifocal, mild Hemorrhage, multifocal, mild
Parathyroid	-Not examined, not in plane of section
Urinary Bladder	-Not examined, missing
Uterus	-Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4763 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Skin	-Hair loss, head, neck area.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, minimal Megalocytosis, moderate
Lung	-Hemorrhage, local areas, moderate
Ovary	-No diagnosis, inadequate section
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Uterus	-Hydrometra, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Skin.

Animal Number: 1R-4775 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Hepatocyte vacuolation, multifocal, minimal Megalocytosis, moderate Portal bile duct proliferation, mild
Lung	-Alveolar macrophages, multifocal, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section
Uterus	-Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4779 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Uterus	-Dilated, filled with a cloudy fluid.
Microscopic Observations:	
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, minimal
Lung	-Pneumonia, interstitial, chronic, multifocal, mild Hemorrhage, multifocal, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-No diagnosis, inadequate section
Uterus	-Hydrometra, moderate Endometritis, chronic, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4780 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, minimal Megalocytosis, mild
Lung	-Hemorrhage, local areas, moderate
Parathyroid	-Not examined, not in plane of section
Thyroid	-No diagnosis, inadequate section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4782 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Liver	-Right lateral lobe herniated through the diaphragm into the right thoracic cavity. The lobe within the thorax is mottled dark red.

Microscopic Observations:

Liver	-Hepatocyte vacuolation, multifocal, mild Telangiectasis, moderate Telangiectasis in herniated liver lobe.
Spleen	-Hemosiderosis, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4783 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:

Skin	-Small subcutaneous mass, 1 cm dia., behind right shoulder.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, focal, mild
Liver	-Megalocytosis, mild Pigment, Kupfer cell, brown, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild Hemorrhage, local areas, mild
Mammary Gland	-Adenocarcinoma
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4785 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Liver	-Slightly pale
Microscopic Observations:	
Esophagus	-Not examined, missing
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, minimal
Lung	-Bronchiectasis, focal, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid, Trachea, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4787 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Cortical degeneration, focal, unilateral, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, moderate Calculus, pelvic
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild
Pituitary	-Adenoma
Uterus	-Metaplasia, squamous, glandular, moderate Hyperplasia, glandular epithelium, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4788 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, mild
Liver	-Hepatocyte vacuolation, multifocal, minimal Megalocytosis, moderate
Lung	-Hemorrhage, multifocal, mild Perivascular mononuclear infiltrate, mild Pneumonia, interstitial, chronic, multifocal, mild
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Thyroid	-Not examined, missing
Trachea	-No diagnosis, inadequate section
Uterus	-Metaplasia, squamous, glandular, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Adrenal, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4793 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:	
Mesentary	-Small nodular mass 1 x 1.5 cm, next to the right ovary.
Microscopic Observations:	
Esophagus	-Not examined, missing
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, minimal Megalocytosis, minimal
Lung	-Hemorrhage, local areas, mild
Mesentary	-Necrosis, fat, nodular, moderate Steatitis, chronic, moderate
Parathyroid	-Not examined, not in plane of section
Salivary Gland	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Adrenal,

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Animal Number: 1R-4793 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Thyroid, Trachea, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-4806 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:
-No visible lesions.

Microscopic Observations:

Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Hemorrhage, local areas, mild
Parathyroid	-Not examined, not in plane of section
Uterus	-Metaplasia, squamous, glandular, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine,
Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Pituitary, Adrenal, Thyroid,
Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4816 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 53) 1 Year Interim Sacrifice

Macroscopic Observations:
-No visible lesions.

Microscopic Observations:

Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Hemorrhage, multifocal, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine,
Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Thyroid,
Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Adrenal.

Animal Number: 1R-3518 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations: *

Skin	-Raised inflamed lesion on right rear footpad.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild Medullary cell hyperplasia, multifocal, mild
Heart	-Myocarditis, chronic nonsuppurative, local areas, moderate
Kidney	-Chronic progressive nephropathy, minimal Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, minimal Portal bile duct proliferation, mild
Lung	-Vascular mineralization, minimal Pneumonia, interstitial, chronic, multifocal, mild Perivascular mononuclear infiltrate, moderate
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Skin	-Pododermatitis, ulcerative, hindleg, marked
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3519 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, multifocal, mild Cortical vacuolation, multifocal, mild
Esophagus	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, multifocal, mild

* ADDITIONAL MACROSCOPIC OBSERVATION: TAIL LESION HEALED, SMALL PROCESS - NO TISSUE TAKEN. J. Hilinski 4/4/88
STUDY DIRECTOR

Species: Rat
Project Number: 0281CR0012

Animal Number: 1R-3519 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, moderate Pneumonia, interstitial, chronic, multifocal, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3521 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 92) Sacrificed in extremis

Macroscopic Observations:

Skin	-Both hind footpads ulcerated.
Liver	-Pale
Spleen	-Enlarged

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, mild Medullary cell hyperplasia, multifocal, mild
Heart	-Myocardial fibrosis, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Hepatocyte vacuolation, centrilobular, moderate
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, local areas, mild Edema, local areas, mild Fibrosis, pleural, mild Thrombus
Parathyroid	-Not examined, missing
Skin	-Pododermatitis, ulcerative, hindleg, marked
Spleen	-Hematopoiesis, extramedullary, increased, moderate
Stomach	-Edema, submucosal, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3523 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 95) Sacrificed in extremis

Macroscopic Observations:	
Soft Tissues (thorax)	-Mass, 10 x 9 x 4 cm in left axilla involving muscle and rib, extending into left thoracic cavity, collapsing left lung. Mass soft and fatty.
Stomach	-Wall edematous with possible ulceration in cardia.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, mild Sinusoidal ectasia, cortex, diffuse, mild
Heart	-Myocardial fibrosis, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild
Lung	-Vascular mineralization, mild Hemorrhage, focal, mild Alveolar macrophages, mild
Prostate	-Prostatitis, acute, suppurative, marked
Skin	-Fibrosarcoma, thorax Well differentiated, highly cellular with moderate collagen formation.
Stomach	-Ulcer, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3524 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Small red lesion.
Microscopic Observations:	
Adrenal	-Medullary cell hyperplasia, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate Pelvic mineralization, mild
Large Intestine	-Nematodiasis, colon
Liver	-Hepatocyte alteration, vacuolated, moderate Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild

Animal Number: 1R-3524 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Thyroid	-Follicular hyperplasia, cystic, unilateral, moderate Large cystic lesion occupying much of one thyroid lobe.

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3525 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Bone	-Joints of right forelimb and right hindlimb swollen.
Liver	-Raised pale circular lesion, 2 cm dia., in medial lobe.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, moderate
Bone	-Arthritis, synovitis; joints, foreleg, hindleg, marked
Heart	-Myocarditis, chronic nonsuppurative, local areas, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocellular carcinoma Large, poorly differentiated, anaplastic, infiltrative. Adenoid areas. Multiple tumor emboli in lung.
Lung	-Vascular mineralization, mild Metastatic neoplasm
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder,

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Animal Number: 1R-3525 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Aorta, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3526 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Cystoid degeneration, focal, mild
	Hepatocyte alteration, vacuolated, mild
Lung	-Vascular mineralization, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3528 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Kidney	-Hydronephrosis
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild
Kidney	-Chronic progressive nephropathy, moderate
	Hydronephrosis, unilateral, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
Pituitary	-Hyperplasia, focal, pars distalis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus,

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Animal Number: 1R-3528 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3529 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 96) Sacrificed in extremis

Macroscopic Observations:

Skin	-Areas of dermatitis with hair loss, some scabbed; back, side, abdomen.
Liver	-Raised pale mass, 1.2 cm dia. in left lateral lobe.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocellular carcinoma Trabecular pattern, fairly well differentiated.
Lung	-Vascular mineralization, mild Edema, subpleural, moderate
Parathyroid	-Not examined, not in plane of section
Prostate	-Not examined, missing
Salivary Gland	-Not examined, missing
Skin	-Ulcer, back, abdomen, marked
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-3530 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Heart	-Myocarditis, chronic nonsuppurative, focal, minimal
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Cystoid degeneration, focal, moderate Hepatocyte alteration, vacuolated, mild

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Animal Number: 1R-3530 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Peribronchial lymphoid hyperplasia, mild
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3531 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Portal mononuclear cell infiltrate, minimal
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, local areas, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3532 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised red mass, 0.4 cm dia.
Kidney	-Fluid filled cyst, 1 cm dia., in right kidney

Microscopic Observations:

Eye	-Retinal atrophy, focal, mild
Heart	-Myocardial fibrosis, focal, mild
Kidney	-Chronic progressive nephropathy, moderate
	Cyst, cortical, marked
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Hemorrhage, local areas, mild
	Perivascular mononuclear infiltrate, mild

Animal Number: 1R-3532 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lymph Node (mesenteric)	-Hemorrhage, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland.

Animal Number: 1R-3533 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Spleen	-Pale circular depressed area, 0.4 cm dia.

Microscopic Observations:

Eye	-No diagnosis, inadequate section
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Perivascular mononuclear infiltrate, mild
Prostate	-Prostatitis, acute, suppurative, mild
Spleen	-Hemosiderosis, mild Fibrosis, local areas, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-3534 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Sacrificed in extremis

Macroscopic Observations:

Thymus	-Enlarged
Pancreas	-Massive beige colored mass, 7.5 x 3 cm in area of pancreas completely surrounding spleen and adhering to posterior areas of right and left lateral

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Animal Number: 1R-3534 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Sacrificed in extremis

Macroscopic Observations (continued):

Pancreas (continued)	-liver lobes.
Kidney	-Pale and pitted.
Testis/Epididymis	-Right testis small.
Liver	-Pale with yellowish circular lesion 0.3 cm diameter in right anterior lobe

Microscopic Observations:

Adrenal	-Cortical vacuolation, diffuse, moderate Medullary cell hyperplasia, local areas, moderate
Kidney	-Chronic progressive nephropathy, moderate Malignant lymphoma, histiocytic
Liver	-Hepatocyte vacuolation, diffuse, marked
Lung	-Hemorrhage, diffuse, marked Malignant lymphoma, histiocytic
Lymph Node (mesenteric)	-Hemorrhage, mild Malignant lymphoma, histiocytic
Pancreas	-Malignant lymphoma, histiocytic
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Small Intestine	-Malignant lymphoma, histiocytic
Spleen	-Malignant lymphoma, histiocytic
Stomach	-Malignant lymphoma, histiocytic
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, marked
Thymus	-Malignant lymphoma, histiocytic Multiple sections of tumor from thymic and mediastinal areas.
Thyroid	-Not examined, missing
Urinary Bladder	-Malignant lymphoma, histiocytic

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Trachea, Esophagus, Salivary Gland, Eye, Large Intestine, Aorta, Prostate.

Animal Number: 1R-3536 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Skin	-Raised lesion, 1.5 cm dia., appears to be abscess.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild
	Sinusoidal ectasia, cortex, focal, moderate
Kidney	-Chronic progressive nephropathy, minimal
Large Intestine	-Nematodiasis, colon
Liver	-Portal bile duct proliferation, multifocal, mild
	Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, minimal
Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, mild
Skin	-Keratoacanthoma
	Raised lesion from back.

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Urinary Bladder.

Animal Number: 1R-3537 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 73) Found Dead

Macroscopic Observations:	
Liver	-Very pale
Lymph Node (abdominal)	-Renal lymph nodes enlarged.
Abdomen (internal)	-Multilobular, fleshy mass, 4 x 3.5 x 3.5 attached to omentum, left inguinal area.
Pituitary	-Hemorrhagic mass, 0.7 cm dia.
Microscopic Observations:	
Eye	-Not examined, missing
Heart	-Malignant lymphoma, histiocytic
Liver	-Hepatocyte vacuolation, diffuse, marked
	Malignant lymphoma, histiocytic
Lung	-Malignant lymphoma, histiocytic
	Hemorrhage, local areas, moderate
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Not examined, missing
Parathyroid	-Not examined, missing

Animal Number: 1R-3537 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 73) Found Dead

Microscopic Observations (continued):

Pituitary	-Adenoma
Skin	-Malignant lymphoma, histiocytic Mass from inguinal area was malignant lymphoma. There was extensive necrosis in tumor.
Spleen	-Hemosiderosis, mild
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Trachea, Esophagus, Salivary Gland.

Animal Number: 1R-3538 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Small hemorrhagic area, 0.2 cm dia.
Liver	-Multiple pale foci, all lobes.
Spleen	-Enlarged

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Malignant lymphoma, histiocytic
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Malignant lymphoma, histiocytic Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Hemorrhage, minimal
Parathyroid	-Not examined, not in plane of section
Prostate	-Prostatitis, acute, suppurative, marked
Spleen	-Malignant lymphoma, histiocytic
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Pituitary, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3539 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Cyst, pars distalis
Spleen	-Hemosiderosis, mild
Thyroid	-Ultimobranchial cyst

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3540 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 64) Found Dead

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Bone Marrow	-Not examined, missing
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Prostate	-Not examined, missing
Spinal Cord	-Not examined, missing
Thyroid	-Ultimobranchial cyst
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Pituitary, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3541 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Skin	-Raised lesion on left rear footpad.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild Sinusoidal ectasia, cortex, minimal
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Hemorrhage, diffuse, marked Perivascular mononuclear infiltrate, mild
Prostate	-Not examined, missing
Skin	-Pododermatitis, ulcerative, hindleg, marked
Testis/Epididymis	-Not examined, missing
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3542 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Testis/Epididymis	-Both testes small.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, minimal
Lymph Node (mesenteric)	-Hemorrhage, minimal
Pancreas	-Hyperplasia, islet cell, moderate
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, bilateral, marked Polyarteritis, mild
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Adrenal, Parathyroid, Trachea, Salivary Gland, Eye, Esophagus.

Animal Number: 1R-3544 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Hemorrhagic lesion, 0.7 cm dia.
Kidney	-Both enlarged, pale and pitted.
Testis/Epididymis	-Left testis small.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, moderate
	Sinusoidal ectasia, cortex, moderate
Kidney	-Chronic progressive nephropathy, marked
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Pancreas	-Acinar atrophy, mild
	Polyarteritis, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, marked
	Polyarteritis, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye, Heart.

Animal Number: 1R-3545 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 104) Found Dead

Macroscopic Observations:	
Skin	-Circular lesions, 2.5 cm dia. on both hind footpads.
Liver	-Slightly pale
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate
	Cortical vacuolation, multifocal, moderate
Eye	-Not examined, missing
Heart	-Myocardial fibrosis, local areas, mild
Kidney	-Chronic progressive nephropathy, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Pancreas	-Acinar atrophy, moderate
Pituitary	-Adenoma

Animal Number: 1R-3545 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 104) Found Dead

Microscopic Observations (continued):

Skin	-Pododermatitis, ulcerative, hindleg, bilateral, marked
Spleen	-Hematopoiesis, extramedullary, increased, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Liver, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland.

Animal Number: 1R-3547 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 85) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Mass, 0.4 cm dia.
Liver	-Pale

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Brain	-Oligodendroglioma, benign Large neoplasm composed of large, fairly uniform polyhedral cells in cerebral cortex.
Kidney	-Chronic progressive nephropathy, minimal Pyelonephritis, acute, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, periportal, moderate
Lung	-Vascular mineralization, mild
Pituitary	-Adenoma
Stomach	-Edema, submucosal, moderate

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Spleen, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3548 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild

Animal Number: 1R-3548 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, periportal, mild Hepatocyte vacuolation limited to one area of liver.
Lung	-Vascular mineralization, mild Alveolar macrophages, minimal Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Hemorrhage, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Cyst, pars distalis
Thyroid	-C cell carcinoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3549 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 86) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 1.4 x 0.8 cm.
Liver	-Slightly pale

Microscopic Observations:

Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, minimal
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3552 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Spleen	-Circular raised lesion, 1.2 cm dia.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, mild Medullary cell hyperplasia, local areas, moderate
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Prostate	-Prostatitis, acute, suppurative, mild
Spleen	-Hemangiosarcoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3553 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 88) Found Dead

Macroscopic Observations:	
Adrenal	-Left enlarged by a 1 cm dia. mass.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild Pheochromocytoma, benign, unilateral
Eye	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Not examined, missing
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, moderate Hepatocyte vacuolation, multifocal, mild Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing

Animal Number: 1R-3553 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 88) Found Dead

Microscopic Observations (continued):

Pancreas	-Not examined, missing
Pituitary	-Cyst, pars distalis
Salivary Gland	-Not examined, missing
Small Intestine	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus.

Animal Number: 1R-3554 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild
Lung	-Alveolar macrophages, multifocal, moderate Perivascular mononuclear infiltrate, moderate Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, moderate
Parathyroid	-Not examined, not in plane of section
Prostate	-Prostatitis, acute, suppurative, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3555 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 102) Sacrificed in extremis

Macroscopic Observations:

Kidney	-Pale, enlarged; mild hydronephrosis.
Urinary Bladder	-Enlarged, fluid filled, wall appears hemorrhagic.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, moderate

Animal Number: 1R-3555 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 102) Sacrificed in extremis

Microscopic Observations (continued):

Aorta	-Mineralization, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Nephrosis, tubular, moderate Papillary necrosis, moderate Hydronephrosis, mild Tubules dilated with low, basophilic epithelium, scattered mineralized tubules.
Liver	-Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Hemorrhage, focal, mild
Parathyroid	-Not examined, not in plane of section
Prostate	-Prostatitis, acute, suppurative, mild Edema, intersititial, moderate
Small Intestine	-Within normal limits Fewer than protocol number
Spleen	-Hemosiderosis, mild
Stomach	-Edema, submucosal, moderate
Urinary Bladder	-Hemorrhage, marked Epithelial hyperplasia, simple, diffuse, mild Cystitis, acute, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Large Intestine, Testis/Epididymis, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3556 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Adrenal	-Right enlarged by mass, 2 x 1 cm.

Microscopic Observations:

Adrenal	-Carcinoma, cortical, unilateral Large neoplasm, mostly necrotic. Cells foamy, polyhedral arranged in cords and sheets. High mitotic activity. Multiple lung metastases.
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild

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Animal Number: 1R-3556 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Pneumonia, interstitial, chronic, multifocal, mild
	Metastatic neoplasm
	Perivascular mononuclear infiltrate, mild
	Vascular mineralization, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3557 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte alteration, vacuolated, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
Thyroid	-Hyperplasia, C cell, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3558 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.9 cm dia.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Chronic progressive nephropathy, mild
	Calculus, pelvic, minimal
Liver	-Cystoid degeneration, focal, minimal

Animal Number: 1R-3558 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3560 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 35) Sacrificed in extremis

Macroscopic Observations:

Brain	-Focal circumscribed dark area, dorsal surface, left cerebral hemisphere (0.2 cm dia.) and lateral surface of right cerebral hemisphere (0.2 cm dia.)
Lung	-Dark red diffuse mottling, all lobes; red frothy exudate at trachea.
Spleen	-Enlarged
Lymph Node (abdominal)	-Hepatic and renal nodes enlarged.
Liver	-Pale, appears enlarged.

Microscopic Observations:

Brain	-Abscess, mild Hemorrhage, multifocal, moderate
Liver	-Malignant lymphoma, histiocytic
Lung	-Malignant lymphoma, histiocytic Hemorrhage, diffuse, marked Necrosis, local areas, marked
Lymph Node (mesenteric)	-Hemorrhage, minimal
Small Intestine	-Within normal limits Fewer than protocol number
Spleen	-Hematopoiesis, extramedullary, increased, marked

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3561 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Soft Tissues (leg)	-Right and left hindpaw and right forepaw swollen.
Kidney	-Right kidney polycystic.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, mild Medullary cell hyperplasia, multifocal, mild
Bone	-Arthritis, synovitis; joints, hindleg, foreleg, marked
Bone Marrow	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild Cyst, cortical, unilateral, marked
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Perivascular mononuclear infiltrate, mild Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Hemorrhage, local areas, moderate
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Spinal Cord	-Not examined, missing
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, moderate Polyarteritis, marked
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Prostate, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3562 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Skin	-Raised ulcerated inflamed lesion, right rear footpad.
Spleen	-Several pale foci.
Microscopic Observations:	
Adrenal	-Nodular hyperplasia, cortex, unilateral, moderate

Animal Number: 1R-3562 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, mild Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Skin	-Pododermatitis, ulcerative, hindleg, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-3563 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Thyroid	-One side enlarged, 1 x 0.8 cm.
Skin	-Mass, 1.7 x 1.4 cm, dorsal area.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild Sinusoidal ectasia, cortex, minimal
Brain	-Astrocytoma, benign Poorly defined lesion in basal area of cerebrum. Tumor cells spindelate.
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Hepatocyte alteration, basophilic, moderate Portal mononuclear cell infiltrate, mild Hepatocyte alteration, vacuolated, moderate Necrosis, local areas, moderate
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Pancreas	-Acinar atrophy, marked
Pituitary	-Adenoma
Prostate	-Prostatitis, acute, suppurative, moderate

Animal Number: 1R-3563 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Skin	-Keratoacanthoma, back
Thyroid	-C cell carcinoma

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3564 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Kidney	-Pale area in cortex of one kidney.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild Medullary cell hyperplasia, multifocal, moderate
Bone Marrow	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild Myocardial fibrosis, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate Cyst, unilateral, moderate Area of multilocular cysts in cortex with lipid change in surrounding parenchyma.
Liver	-Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Portal mononuclear cell infiltrate, mild
Lung	-Vascular mineralization, mild
Pancreas	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Spinal Cord	-Not examined, missing
Testis/Epididymis	-Mineralization, focal, mild

The following tissues were found to be within normal limits:
Brain, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Eye.

Animal Number: 1R-3565 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 84) Found Dead

Macroscopic Observations:	
Skin	-Large mass, 7 x 7 cm, scrotal area.
Liver	-Pale
Microscopic Observations:	
Adrenal	-Not examined, missing
Aorta	-Not examined, missing
Esophagus	-Not examined, missing
Eye	-No diagnosis, inadequate section
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-No diagnosis, inadequate section
Liver	-Hepatocyte vacuolation, multifocal, mild Necrosis, multifocal, moderate
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Not examined, missing
Parathyroid	-Not examined, missing
Pituitary	-Not examined, missing
Prostate	-Not examined, missing
Salivary Gland	-Not examined, missing
Skin	-Liposarcoma The scrotal mass was composed of large, vacuolated mononuclear cells. The degree of autolysis made diagnosis somewhat uncertain.
Small Intestine	-Not examined, missing
Spleen	-Hematopoiesis, extramedullary, increased, mild
Thyroid	-Not examined, missing
Trachea	-Not examined, missing
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Testis/Epididymis.

Animal Number: 1R-3566 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Small dark lesion.
Microscopic Observations:	
Adrenal	-Within normal limits One of pair present
Kidney	-Chronic progressive nephropathy, mild

Animal Number: 1R-3566 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, mild
Pancreas	-Polyarteritis, moderate
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Lymph Node (mesenteric), Salivary Gland, Stomach, Small Intestine, Heart, Eye, Esophagus.

Animal Number: 1R-3567 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Skin	-Raised papilloma type mass on back; raised inflamed lesion, right rear footpad.
Spleen	-Two pale foci.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild
	Nodular hyperplasia, cortex, focal, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, minimal
	Perivascular mononuclear infiltrate, minimal
Skin	-Papilloma, back
	Pododermatitis, ulcerative, hindleg, marked
Spleen	-Necrosis, local areas, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3569 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Kidney	-Bilaterally enlarged; pale, pitted.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, minimal
	Sinusoidal ectasia, cortex, mild
	Medullary cell hyperplasia, multifocal, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, mild
Pituitary	-Hyperplasia, focal, pars distalis, mild
Testis/Epididymis	-Polyarteritis, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3571 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Pale
Kidney	-Pale, pitted, enlarged.
Mesentery	-Mesenteric vessels thickened
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, minimal
Heart	-Myocarditis, chronic nonsuppurative, multifocal, minimal
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, minimal
Mesentery	-Polyarteritis, marked
Pancreas	-Polyarteritis, marked
Parathyroid	-Not examined, not in plane of section
Pituitary	-Not examined, missing

Animal Number: 1R-3571 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Small Intestine	-Polyarteritis, mesentery, marked
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Polyarteritis, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3572 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
Pancreas	-Hyperplasia, islet cell, moderate
Parathyroid	-Not examined, not in plane of section
Stomach	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3573 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pancreas	-Small circular pale mass, 0.5 cm dia.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild Pheochromocytoma, benign, unilateral
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Hepatocyte alteration, vacuolated, mild Hepatocyte alteration, basophilic, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Portal mononuclear cell infiltrate, mild

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Animal Number: 1R-3573 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Pancreas	-Acinar atrophy, moderate Islet cell adenoma
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3574 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Sacrificed in extremis

Macroscopic Observations:

Skin	-Ulcerated right and left hind footpads; circular white subcutaneous mass, 1.5 cm dia., in right inguinal area.
Thorax (internal)	-Filled with fluid.
Heart	-Slightly pale and flaccid.
Liver	-Slightly pale
Kidney	-Pale and pitted; 1.5 cm cyst in right kidney.
Testis/Epididymis	-Testes small

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild
Aorta	-Necrosis, local areas, moderate Uniform intimal necrosis with reactive cellular infiltrate.
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, marked Cyst, unilateral, marked
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Pneumonia, interstitial, chronic, diffuse, moderate Perivascular mononuclear infiltrate, mild Edema, local areas, marked
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-3574 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Sacrificed in extremis

Microscopic Observations (continued):

Pituitary	-Cyst, pars intermedia
Prostate	-Prostatitis, acute, suppurative, moderate
Salivary Gland	-Not examined, missing
Skin	-Fibroma, subcutaneous, inguinal
	Pododermatitis, ulcerative, hindleg, marked
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, bilateral, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Thyroid, Trachea, Esophagus, Eye.

Animal Number: 1R-3576 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 55) Sacrificed in extremis

Macroscopic Observations:

Skin	-Moist area around genital papilla.
Abdomen (internal)	-Large amount of gas in gastrointestinal tract; no food in stomach.

Microscopic Observations:

Kidney	-Pelvic mineralization, mild
Lung	-Hemorrhage, diffuse, marked
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Liver, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3577 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Cystoid degeneration, multifocal, mild
	Hepatocyte alteration, vacuolated, mild

Animal Number: 1R-3577 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
Mesentery	-Polyarteritis, marked
Pancreas	-Polyarteritis, marked
Small Intestine	-Polyarteritis, mesentery, moderate
Spleen	-Hemosiderosis, mild
Thyroid	-Cyst, colloid, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3578 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.7 cm dia.
Skin	-Raised ulcerated inflamed lesion, 1.5 cm dia., left hind footpad.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild Hydronephrosis, unilateral, moderate Calculi present in ureter of hydronephrotic kidney.
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild
Lung	-Vascular mineralization, mild Hemorrhage, local areas, moderate
Pituitary	-Adenoma
Prostate	-Prostatitis, acute, suppurative, moderate
Salivary Gland	-Sialadenitis, chronic, minimal Very minimal lesion, only one duct affected.
Skin	-Pododermatitis, ulcerative, hindleg, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-3579 Sex: Male Group: (1) CONTROL 0 ppm
Fate: (Week= 86) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised mass, 0.8 cm dia.
Liver	-Raised pale 2 cm dia. mass in right lateral lobe.
Skin	-Mass seen clinically on right side appears to be healed lesion.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal bile duct proliferation, mild Hepatocellular carcinoma Portal mononuclear cell infiltrate, mild
Lung	-Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Keratoacanthoma Skin lesion from right side.
Small Intestine	-Within normal limits Fewer than protocol number
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, mild Polyarteritis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Prostate, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4576 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 25) Sacrificed in extremis

Macroscopic Observations:	
Liver	-Enlarged; mottled yellow color.
Lymph Node (bronchial)	-Enlarged
Lung	-Pale
Spleen	-Enlarged
Stomach	-Red patchy areas on mucosa.
Lymph Node (mesenteric)	-Enlarged and reddened.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Bone Marrow	-Malignant lymphoma, lymphocytic
Kidney	-Malignant lymphoma, lymphocytic Mineralization, cortical, mild

Animal Number: 1R-4576 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 25) Sacrificed in extremis

Microscopic Observations (continued):

Liver	-Malignant lymphoma, lymphocytic
Lung	-Malignant lymphoma, lymphocytic
	Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Malignant lymphoma, lymphocytic
Pancreas	-Malignant lymphoma, lymphocytic
Salivary Gland	-Not examined, missing
Spinal Cord	-Malignant lymphoma, lymphocytic
Spleen	-Malignant lymphoma, lymphocytic
Stomach	-Ulcer
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Heart, Small Intestine, Large Intestine, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Eye.

Animal Number: 1R-4577 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Found Dead

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.8 cm dia.
Mammary Gland	-Multilobular mass, 4.5 x 3.5 x 2 cm, in right axilla.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Pelvic mineralization, mild
	Nephrosis, tubular, marked
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Lobular hyperplasia
Pituitary	-Hemorrhage, marked
	Necrosis, moderate
Spleen	-Hemosiderosis, mild
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4579 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 84) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised mass, 0.5 cm dia.
Skin	-Raised thickened lesion with scab on right side.
Liver	-Slightly pale
Stomach	-Somewhat reddened
Kidney	-Fluid filled cyst in left kidney.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Aorta	-Mineralization, multifocal, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, moderate
Kidney	-Nephrosis, tubular Pelvic mineralization, marked Cyst, cortical, moderate Hyperplasia, pelvic epithelium, diffuse, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Ulcer, marked Skin lesion from side.
Spleen	-Hemosiderosis, mild
Stomach	-Mineralization, mucosal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Small Intestine, Large Intestine, Urinary Bladder, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4580 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 52) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Enlarged; dark red mass, 0.5 cm dia.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Aorta	-Not examined, missing
Esophagus	-Not examined, missing
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-4580 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 52) Sacrificed in extremis

Microscopic Observations (continued):

Pituitary	-Adenoma
Spleen	-Hemosiderosis, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Liver, Kidney, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Uterus, Ovary, Trachea, Thyroid, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4581 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 85) Sacrificed in extremis

Macroscopic Observations:

Mammary Gland	-Ulcerated mass, 6 x 6 x 3 cm behind right shoulder.
Liver	-Possibly slightly pale and swollen.
Spleen	-Enlarged

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, basophilic, mild Hematopoiesis, extramedullary, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild
Mammary Gland	-Adenocarcinoma
Parathyroid	-Not examined, not in plane of section
Spleen	-Hematopoiesis, extramedullary, increased, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4583 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Eye	-Extensive post bleeding inflammation of right eye.
Mammary Gland	-Firm nodular mass, 6 x 5 x 3 cm, left inguinal.

Animal Number: 1R-4583 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Adrenal	-Sinusoidal ectasia, cortex, marked
Eye	-Panophthalmitis, unilateral, marked
Kidney	-Pelvic mineralization, mild
	Chronic progressive nephropathy, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild
	Necrosis, focal, mild
Lung	-Alveolar macrophages, mild
	Perivascular mononuclear infiltrate, mild
Mammary Gland	-Fibroadenoma
Ovary	-Tubular adenoma, unilateral
Parathyroid	-Not examined, not in plane of section
Spleen	-Hematopoiesis, extramedullary, increased, moderate
Uterus	-Cystic glands, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4584 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Eye	-Slight atrophy with corneal opacity, right eye.
Pituitary	-Enlarged
Adrenal	-Left adrenal enlarged.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex
Eye	-Phthsis bulbi, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Pneumonia, interstitial, chronic, multifocal, mild
	Perivascular mononuclear infiltrate, mild
	Hemorrhage, local areas, mild
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-4584 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4586 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised dark mass, 0.3 cm dia.
Uterus	-Dark area, 0.5 x 0.5 cm, in left horn near cervix.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild
Lung	-Perivascular mononuclear infiltrate, minimal
Ovary	-Not examined, missing
Pancreas	-Acinar atrophy, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Cystic glands, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4587 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Small nodular mass, 3 x 2 cm, axillary; large mass, 8 x 8 x 3 cm, throat area.

Animal Number: 1R-4587 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Adrenal	-Sinusoidal ectasia, cortex, marked
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, multifocal, minimal
Mammary Gland	-Lobular hyperplasia
Parathyroid	-Not examined, not in plane of section
Salivary Gland	-Not examined, missing
Skin	-Fibroma, subcutaneous
Spleen	-Hemosiderosis, mild
Uterus	-Within normal limits Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-4591 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, moderate Sinusoidal ectasia, cortex, minimal
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte alteration, vacuolated, mild
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Acinar atrophy, focal, minimal
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-4592 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 88) Found Dead

Macroscopic Observations:	
Pituitary	-Enlarged, 0.9 x 1 cm.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Lobular hyperplasia, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4593 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Liver	-Hepatocyte alteration, vacuolated, mild
	Hepatocyte alteration, basophilic, mild
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4594 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 79) Found Dead

Macroscopic Observations:	
Kidney	-Right kidney appears slightly enlarged; filled with yellow milky fluid.
Urinary Bladder	-Enlarged, 4.5 x 2 cm; filled with large, hard calculi.
Pituitary	-Hemorrhagic mass, 0.9 x 0.6 cm
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate One of pair present
Aorta	-Not examined, missing
Kidney	-Pyelonephritis, acute, bilateral, moderate Hydronephrosis, bilateral, moderate Nephrosis, tubular, bilateral, moderate
Liver	-Hepatocyte alteration, vacuolated, mild
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Ovary	-Within normal limits One of pair present
Pancreas	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Small Intestine	-Not examined, missing
Spleen	-Hemosiderosis, moderate
Urinary Bladder	-Epithelial hyperplasia, papillary, diffuse, marked Calculus

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Large Intestine, Uterus, Mammary Gland, Trachea, Thyroid, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-4595 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Hemorrhagic mass, 0.8 cm dia.
Mammary Gland	-Small lobular mass, 2.7 x 1.5 x 1.8 cm, left axilla.
Pancreas	-Small lobular mass, 1 x 0.7 cm, in area of pancreas.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate

Animal Number: 1R-4595 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild
Lung	-Alveolar macrophages, mild
Mammary Gland	-Lobular hyperplasia
Pancreas	-Islet cell carcinoma Partially encapsulated with invasion of capsule. Well differentiated.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Adenoma Small circumscribed papillary lesion.

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye, Ovary.

Animal Number: 1R-4596 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 78) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Mass, 0.8 x 0.6 cm.
Mammary Gland	-Mass, 2.5 x 2 x 1.5 cm, in left axilla.
Liver	-Very pale
Kidney	-Bilaterally pale and pitted; slightly enlarged; 0.4 cm dia. cyst in right.
Adrenal	-Pale, bilaterally

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, moderate Sinusoidal ectasia, cortex, moderate Medullary cell hyperplasia, multifocal, mild Cortical degeneration, local areas, moderate
Aorta	-Mineralization, mild Mineralization also in media of an elastic artery in section of mesentery submitted for mesenteric lymph node.
Kidney	-Chronic progressive nephropathy, marked Cyst, cortical, moderate
Liver	-Hepatocyte vacuolation, diffuse, marked

Animal Number: 1R-4596 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 78) Sacrificed in extremis

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Alveolar macrophages, minimal
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Fibroadenoma
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Spleen	-Hemosiderosis, moderate
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Uterus, Ovary, Trachea, Thyroid, Esophagus, Pancreas, Eye.

Animal Number: 1R-4597 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Adrenal	-Right adrenal enlarged.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, marked
	Medullary cell hyperplasia, focal, mild
Kidney	-Chronic progressive nephropathy, minimal
	Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
Lung	-Alveolar macrophages, mild
	Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-No diagnosis, inadequate section
Ovary	-Tubular adenoma, unilateral
Pancreas	-Cyst
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Uterus	-Within normal limits
	Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Pituitary, Trachea, Thyroid, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-4598 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Mass, 0.7 cm dia.
Adrenal	-Left adrenal greatly enlarged.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Brain	-Oligodendroglioma, benign
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate Pelvic mineralization, mild Hyperplasia, pelvic epithelium, local areas, mild
Liver	-Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, basophilic, mild
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Ovary	-Tubular adenoma
Pancreas	-Acinar atrophy, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4599 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 102) Found Dead

Macroscopic Observations:	
Mammary Gland	-Subcutaneous mass, 2.5 x 2 x 1 cm, in perineal area.
Liver	-Appears mottled
Stomach	-Areas of enlongated ulceration.
Urinary Bladder	-Thickened walls; mass 1.5 x 1 cm, with adhesions to abdominal wall.
Eye	-No tissue taken due to postmortem changes
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Aorta	-Malignant lymphoma, histiocytic
Esophagus	-Malignant lymphoma, histiocytic
Eye	-Not examined, missing

Animal Number: 1R-4599 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 102) Found Dead

Microscopic Observations (continued):

Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Malignant lymphoma, histiocytic
	Pelvic mineralization, mild
	Hyperplasia, pelvic epithelium, local areas, mild
	Nephrosis, tubular, mild
Large Intestine	-Malignant lymphoma, histiocytic
Liver	-Malignant lymphoma, histiocytic
	Necrosis, local areas, marked
Lung	-Malignant lymphoma, histiocytic
	Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Malignant lymphoma, histiocytic
Mammary Gland	-Malignant lymphoma, histiocytic
Ovary	-Malignant lymphoma, histiocytic
Pancreas	-Malignant lymphoma, histiocytic
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Stomach	-Necrosis, mucosal, moderate
Thyroid	-Malignant lymphoma, histiocytic
Urinary Bladder	-Malignant lymphoma, histiocytic
	Epithelial hyperplasia, simple, diffuse, mild
Uterus	-Malignant lymphoma, histiocytic

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Small Intestine, Trachea, Salivary Gland.

Animal Number: 1R-4600 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Found Dead

Macroscopic Observations:

Mammary Gland	-Subcutaneous cystic mass, 4 x 3.5 x 2 cm, in region of throat; subcutaneous multilobular mass, 5 x 4 x 2 cm, in right axilla.
Liver	-Appears mottled

Microscopic Observations:

Adrenal	-Necrosis, unilateral, marked
Eye	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild

Animal Number: 1R-4600 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Found Dead

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
	Pelvic mineralization, mild
	Nephrosis, tubular, moderate
Liver	-Portal mononuclear cell infiltrate, moderate
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Hepatocyte alteration, eosinophilic, moderate
	Telangiectasis, mild
Lung	-Vascular mineralization, mild
Mammary Gland	-Adenoma, papillary
	Lobular hyperplasia
Ovary	-Cyst, unilateral
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4602 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Eye	-Cornea appears cloudy.
Pituitary	-Raised mass, 1 cm dia.
Adrenal	-Right adrenal enlarged.
Kidney	-Pale and pitted.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, marked
	Cortical degeneration, diffuse, marked
Eye	-No diagnosis, inadequate section
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, marked
	Pelvic mineralization, mild
	Cyst, cortical
Liver	-Hepatocyte alteration, basophilic, mild
Lung	-Hemorrhage, local areas, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

Animal Number: 1R-4602 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Spleen	-Hemosiderosis, mild
Uterus	-Within normal limits Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4603 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Liver	-Circular raised lesion, 0.6 cm dia., left lateral lobe.
Skin	-Hair loss on forelimbs.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate Cortical degeneration, diffuse, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild
Lung	-Perivascular mononuclear infiltrate, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Acanthosis, mild
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4604 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Adrenal	-Left adrenal enlarged.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Aorta	-Not examined, missing
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild
	Pelvic mineralization, mild
Large Intestine	-Not examined, missing
Liver	-Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Hyperplastic nodule
Ovary	-Cyst, unilateral
Parathyroid	-Not examined, not in plane of section
Uterus	-Within normal limits
	Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Lung, Stomach, Small Intestine, Urinary Bladder, Mammary Gland, Pituitary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4605 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 77) Sacrificed in extremis

Macroscopic Observations:	
Kidney	-Slightly pitted
Lung	-Right apical lobe consolidated and somewhat
	enlarged; possibly tumor, mass,
	chronic pneumonia.
Microscopic Observations:	
Adrenal	-Necrosis, local areas, moderate
	Hematopoiesis, extramedullary, multifocal,
	mild
Heart	-Myocarditis, chronic nonsuppurative,
	multifocal, moderate
	Malignant lymphoma, lymphocytic
Kidney	-Chronic progressive nephropathy, moderate
	Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, midzonal, moderate
	Malignant lymphoma, lymphocytic
Lung	-Vascular mineralization, mild
	Malignant lymphoma, lymphocytic
	Large circumscribed mass with extensive
	necrosis.

Animal Number: 1R-4605 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 77) Sacrificed in extremis

Microscopic Observations (continued):

Ovary	-Cyst, unilateral
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spinal Cord	-Malacia, local areas, moderate
Spleen	-Hemosiderosis, mild
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, moderate

The following tissues were found to be within normal limits:
Brain, Bone Marrow, Stomach, Small Intestine, Large Intestine, Aorta, Uterus, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4606 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Small mass, 1.4 cm dia., left lateral area.
Pituitary	-Enlarged; circular dark lesion, 0.4 cm dia.
Uterus	-Dark fluid filled lesion, 0.5 x 0.6 cm, right horn.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild Cortical degeneration, bilateral, moderate Pheochromocytoma, benign, unilateral
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild
Liver	-Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, vacuolated, mild
Lung	-Pigment, moderate Scattered small foci of dark brown pigment-laden macrophages within alveoli.
Lymph Node (mesenteric)	-Hemorrhage, mild
Mammary Gland	-Adenocarcinoma
Ovary	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Hydrometra, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4606 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Trachea, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4607 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 40) Sacrificed in extremis

Macroscopic Observations:

Soft Tissues (neck)	-Reddened gland like structures, possibly enlarged lymph nodes or salivary glands.
Lymph Node	-Enlarged axillary, hepatic, mesenteric and internal iliac lymph nodes.
Liver	-Possibly slightly pale.
Spleen	-Considerably enlarged.

Microscopic Observations:

Adrenal	-Malignant lymphoma, lymphocytic
Aorta	-Malignant lymphoma, lymphocytic
Bone Marrow	-Malignant lymphoma, lymphocytic
Esophagus	-No diagnosis, inadequate section
Eye	-Malignant lymphoma, lymphocytic
Kidney	-Malignant lymphoma, lymphocytic
Liver	-Malignant lymphoma, lymphocytic
Lung	-Malignant lymphoma, lymphocytic Hemorrhage, local areas, mild Abscess
Lymph Node (mesenteric)	-Hemorrhage, moderate Malignant lymphoma, lymphocytic Massive enlargment of node by mature appearing lymphocytes. All other nodes examined were similarily involved.
Mammary Gland	-Malignant lymphoma, lymphocytic
Ovary	-Malignant lymphoma, lymphocytic
Parathyroid	-Not examined, not in plane of section
Salivary Gland	-Not examined, missing
Spleen	-Malignant lymphoma, lymphocytic
Stomach	-Hemorrhage, submucosal, moderate Malignant lymphoma, lymphocytic
Thyroid	-Malignant lymphoma, lymphocytic
Uterus	-Malignant lymphoma, lymphocytic

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Heart, Small Intestine, Large Intestine, Urinary Bladder, Pituitary,

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Animal Number: 1R-4607 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 40) Sacrificed in extremis

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Trachea, Pancreas.

Animal Number: 1R-4609 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 1 cm dia.
Mammary Gland	-Mass, 5 x 4 cm, throat area; 3 cm dia., left axilla.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, moderate
Large Intestine	-Not examined, missing
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Pneumonia, interstitial, chronic, multifocal, mild
Mammary Gland	-Carcinoma Highly cellular very undifferentiated tumor.
Pancreas	-Acinar atrophy, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-C cell adenoma
Uterus	-Within normal limits Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4611 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Mammary Gland	-Large lobular mass, 10 x 7.5 x 5 cm.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked Cortical degeneration, local areas, moderate
Liver	-Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, eosinophilic, mild
Lung	-Hemorrhage, multifocal, mild Alveolar macrophages, multifocal, mild
Mammary Gland	-Fibroadenoma
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4612 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised mass, 0.7 cm dia.
Mammary Gland	-Mass, 3 cm dia., left axilla; 4 cm dia., right axilla; 7 x 6 x 2 cm, right side.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate
Eye	-No diagnosis, inadequate section
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Hemorrhage, diffuse, marked Alveolar macrophages, mild
Mammary Gland	-Galactocele Fibroadenoma Fibroadenoma Two tumors present.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Within normal limits Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine,

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Animal Number: 1R-4612 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Large Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4613 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 89) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Somewhat enlarged
Mammary Gland	-Mass, 10 x 8 x 5 cm, inguinal area; surface ulcerated.
Liver	-Appears pale

Microscopic Observations:

Adrenal	-Hematopoiesis, extramedullary, mild Sinusoidal ectasia, cortex, mild Cortical vacuolation, focal, mild
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, mild Hyperplasia, pelvic epithelium, local areas, mild
Large Intestine	-Not examined, missing
Liver	-Hepatocyte vacuolation, periportal, mild Necrosis, multifocal, mild Hematopoiesis, extramedullary, mild
Lung	-Hemorrhage, multifocal, mild Pneumonia, interstitial, chronic, multifocal, mild
Mammary Gland	-Lobular hyperplasia
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hematopoiesis, extramedullary, increased, moderate
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild
Uterus	-Within normal limits Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Aorta, Ovary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4614 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Mammary Gland	-Mass in perineal area; possible milk cyst.
Uterus	-Large gelatinous cervical mass, 2 cm dia.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Pelvic mineralization, minimal
	Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
Mammary Gland	-Adenocarcinoma
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spinal Cord	-No diagnosis, inadequate section
Spleen	-Hemosiderosis, mild
Thyroid	-Ultimobranchial cyst
Uterus	-Polyp
	This was the mass at cervix noted at necropsy.

The following tissues were found to be within normal limits;
Brain, Bone Marrow, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4615 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Aorta	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Portal bile duct proliferation, mild
	Hepatocyte alteration, vacuolated, mild
	Hepatocyte alteration, basophilic, mild
Lung	-Pneumonia, interstitial, chronic, mild
	Alveolar macrophages, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Uterus	-Within normal limits
	Fewer than protocol number

Animal Number: 1R-4615 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Ovary, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4616 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical degeneration, unilateral, marked
Heart	-Myocardial fibrosis, focal, mild Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, vacuolated, mild
Lung	-Perivascular mononuclear infiltrate, moderate Vascular mineralization, mild Alveolar macrophages, mild
Mammary Gland	-Not examined, missing
Ovary	-Cyst, unilateral
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Pituitary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4617 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 73) Sacrificed in extremis

Macroscopic Observations:	
Ovary	-Hemorrhagic mass, 5 cm dia., left ovary.
Liver	-Pale; left lateral lobe dark red.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild One of pair present
Liver	-Portal mononuclear cell infiltrate, mild Necrosis, diffuse, marked Massive necrosis of one lobe with compensatory increase in mitoses in another lobe.
Lung	-Vascular mineralization, mild
Mammary Gland	-Not examined, missing
Ovary	-Leiomyoma Large well differentiated neoplasm, mostly necrotic, probably arises from an oviduct.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4618 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 93) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised mass, 1.1 cm dia.
Mammary Gland	-Large ulcerated mass, 10 x 7 x 9 cm, right axillary area.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Perivascular mononuclear infiltrate, mild
Mammary Gland	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

Animal Number: 1R-4618 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 93) Sacrificed in extremis

Microscopic Observations (continued):

Skin	-Fibroma, subcutaneous Large neoplasm with extensive collagen formation, large portion necrotic. Described as mammary lesion but no mammary tissue present in section.
Thyroid	-Ultimobranchial cyst
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Ovary, Trachea, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Uterus.

Animal Number: 1R-4619 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 64) Found Dead

Macroscopic Observations:

Spleen	-Slightly enlarged
Liver	-Pale with an irregular surface on all lobes.
Pituitary	-Enlarged with hemorrhagic foci.

Microscopic Observations:

Adrenal	-Necrosis, diffuse, marked Malignant lymphoma, histiocytic
Esophagus	-Not examined, missing
Eye	-Not examined, missing
Kidney	-Nephrosis, tubular, marked
Liver	-Portal bile duct proliferation, marked Necrosis, local areas, moderate Malignant lymphoma, histiocytic
Lung	-Vascular mineralization, mild Malignant lymphoma, histiocytic
Lymph Node (mesenteric)	-Hemorrhage, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Sialadenitis, chronic, moderate
Spleen	-Malignant lymphoma, histiocytic Hematopoiesis, extramedullary, increased, moderate
Stomach	-Necrosis, mucosal, mild
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Small Intestine, Large Intestine, Aorta, Uterus, Ovary,

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Animal Number: 1R-4619 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 64) Found Dead

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Trachea, Thyroid, Pancreas.

Animal Number: 1R-4621 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 99) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Slightly enlarged
Mammary Gland	-Subcutaneous ulcerated mass, 5 x 4 x 1.5 cm, in right axilla.
Liver	-Appears mottled.
Adrenal	-Slightly enlarged.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, mild Sinusoidal ectasia, cortex, marked
Esophagus	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild Nephrosis, tubular, moderate
Liver	-Portal mononuclear cell infiltrate, minimal Hepatocyte vacuolation, periportal, mild
Lung	-Alveolar macrophages, mild Perivascular mononuclear infiltrate, mild Hemorrhage, local areas, mild
Mammary Gland	-Fibroadenoma Galactocele
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hematopoiesis, extramedullary, increased, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4622 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 62) Found Dead

Macroscopic Observations:	
Skin	-Small circular lesion on back; slight hair loss on left lateral side.
Mammary Gland	-Mass, 2 cm dia., right axillary area; 1.5 cm dia., left inguinal area.
Kidney	-Raised area, 0.3 cm dia., on surface of right kidney; appears fluid filled.
Pituitary	-Dark red gelatinous mass.
Lung	-Slightly mottled
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Aorta	-Not examined, missing
Kidney	-Chronic progressive nephropathy, moderate Pelvic mineralization, moderate Hyperplasia, pelvic epithelium, local areas, mild
Liver	-Hepatocyte vacuolation, periportal, moderate
Lung	-Alveolar macrophages, mild
Mammary Gland	-Galactocele
Parathyroid	-Not examined, not in plane of section
Pituitary	-Not examined, missing
Skin	-Ulcer, focal, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Uterus, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4623 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 96) Sacrificed in extremis

Macroscopic Observations:	
Eye	-Opacity, right eye.
Mammary Gland	-Multilobular mass, 11 x 12 x 3 cm, right axilla.
Adrenal	-Appear enlarged
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Esophagus	-Not examined, missing
Eye	-Cataract, unilateral
Kidney	-Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte alteration, vacuolated, mild

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Animal Number: 1R-4623 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 96) Sacrificed in extremis

Microscopic Observations (continued):

Lung	-Pneumonia, interstitial, chronic, multifocal, mild
	Alveolar macrophages, mild
	Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Sinusoidal ectasia, moderate
Mammary Gland	-Fibroadenoma
Pituitary	-Adenoma
Thyroid	-Follicular hyperplasia, cystic, unilateral, mild
Uterus	-Within normal limits
	Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Parathyroid, Pancreas, Salivary Gland.

Animal Number: 1R-4624 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 100) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.6 cm dia.
Mammary Gland	-Ulcerated, cystic mass, 4 x 4 x 3.5 cm, in left axilla-throat area;
	multilobular mass, 8.5 x 5.5 x 3 cm, in right inguinal area.
Lung	-Raised circular nodule, 0.6 cm dia., in left lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Chronic progressive nephropathy, minimal
	Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Pneumonia, interstitial, chronic, multifocal, mild
	Metastatic neoplasm
	Large metastasis of mammary adenocarcinoma.
Mammary Gland	-Fibroadenoma
	Adenocarcinoma
Ovary	-Cyst, unilateral

Animal Number: 1R-4624 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 100) Sacrificed in extremis

Microscopic Observations (continued):

Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hematopoiesis, extramedullary, increased, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4625 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 100) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Enlarged due to raised mass, 1.2 cm dia.
Mammary Gland	-Cystic mass, 2 cm dia., left axilla.
Adrenal	-Both appear enlarged.
Kidney	-Somewhat pitted

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, marked
	Cortical degeneration, local areas, mild
Esophagus	-Not examined, missing
Eye	-No diagnosis, inadequate section
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, minimal
Lung	-Hemorrhage, local areas, moderate
Mammary Gland	-Fibroadenoma
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4626 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised mass, 0.9 cm dia.
Microscopic Observations:	
Adrenal	-Pheochromocytoma, benign, unilateral
Kidney	-Chronic progressive nephropathy, moderate Pelvic mineralization, moderate
Liver	-Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spinal Cord	-Not examined, missing
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4627 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Mass, 1 x 0.6 cm.
Mammary Gland	-Firm mass, 5.5 x 4 x 3.5 cm, right lateral area; lobular mass, 7 x 6 x 5 cm, left axilla.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate Medullary cell hyperplasia, multifocal, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, moderate Hepatocyte alteration, basophilic, moderate
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Perivascular mononuclear infiltrate, mild
Mammary Gland	-Adenocarcinoma Neoplasm arises in several places in a fibroadenoma.
Ovary	-Tubular adenoma, unilateral Cyst, bilateral

Animal Number: 1R-4627 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Pancreas	-Islet cell adenoma
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Fibroma, subcutaneous
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4628 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Mass, 1.2 cm dia.
Mammary Gland	-Small nodule, 1.5 cm dia., right axilla; possible milk cyst.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
Mammary Gland	-Galactocele Adenoma, papillary Small highly cellular neoplasm lying adjacent to several large galactocoels.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Table: 2

Animal Number: 1R-4633 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 63) Sacrificed in extremis

Macroscopic Observations:

Liver	-Very pale
Spleen	-Slightly enlarged
Mammary Gland	-Large subcutaneous mass, 6 x 10 x 2.5 cm, with necrotic areas, containing dark brown fluid, ventral abdomen.

Microscopic Observations:

Adrenal	-Hematopoiesis, extramedullary, cortical, mild Sinusoidal ectasia, cortex, mild
Aorta	-Not examined, missing
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, minimal Vacuolation, conv. tub. epitheium, moderate
Liver	-Hepatocyte vacuolation, centrilobular, marked
Lung	-Vascular mineralization, mild Hemorrhage, multifocal, mild
Mammary Gland	-Adenocarcinoma Well differentiated, ductular pattern, areas of moderate mitotic activity, large areas of necrosis.
Parathyroid	-Not examined, not in plane of section
Salivary Gland	-Not examined, missing
Spleen	-Hematopoiesis, extramedullary, increased, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Uterus, Ovary, Pituitary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-4634 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Mass, 0.7 cm dia.
Mammary Gland	-Lobular mass, 8 x 6 x 4 cm, right axilla; lobular mass, 9 x 7 x 3.5 cm, left inguinal.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Esophagus	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild

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Animal Number: 1R-4634 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild Hepatocyte alteration, basophilic, moderate Hepatocyte alteration, eosinophilic, mild
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild Hemorrhage, multifocal, mild
Mammary Gland	-Fibroadenoma Fibroadenoma Both masses were fibroadenomas. Areas of necrosis and cystic areas in tumors.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hematopoiesis, extramedullary, increased, mild Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4635 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 94) Found Dead

Macroscopic Observations:

Small Intestine	-Jejunum appears inflamed with reddish fluid; ileum appears inflamed near cecum.
Mammary Gland	-Mass, 7 x 7.5 x 2 cm, multilobular and ulcerated, right inguinal; mass, light beige in color, spherical, 2 cm dia., in left axilla.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild Hematopoiesis, extramedullary, cortical, moderate
Esophagus	-Not examined, missing
Eye	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, minimal

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Animal Number: 1R-4635 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 94) Found Dead

Microscopic Observations (continued):

Liver	-Hepatocyte vacuolation, diffuse, mild
	Hematopoiesis, extramedullary, mild
	Mitotic activity, increased, moderate
Lung	-Vascular mineralization, mild
	Metastatic neoplasm
Mammary Gland	-Adenoma
	Adenocarcinoma
	Extensive necrosis.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Not examined, missing
Salivary Gland	-Not examined, missing
Spleen	-Hematopoiesis, extramedullary, increased, marked
Thyroid	-Ultimobranchial cyst

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Lymph Node (mesenteric), Pancreas.

Animal Number: 1R-4636 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Mass in right axilla appears to be milk cyst.
Liver	-Slightly raised dark mass, 0.6 cm dia., left lateral lobe.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, mild
	Sinusoidal ectasia, cortex, mild
Heart	-Myocardial fibrosis, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Hepatocyte vacuolation, multifocal, mild
	Hepatocyte alteration, vacuolated, mild
	Hepatocyte alteration, basophilic, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Mammary Gland	-Lobular hyperplasia
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

Animal Number: 1R-4636 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4637 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 82) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Reddened mass, 1 cm dia.
Lung	-Focal areas of consolidation in anterior part of right and left lung.
Liver	-Possibly pale

Microscopic Observations:

Eye	-Keratitis, acute, marked
Kidney	-Pelvic mineralization, mild Mineralization, cortical, mild Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, periportal, moderate
Lung	-Pneumonia, acute exudative, local areas, moderate Hemorrhage, multifocal, mild
Mammary Gland	-Galactocele
Pituitary	-Adenoma
Spleen	-Hemosiderosis, moderate
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4638 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Mass, 0.5 cm dia.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild
Esophagus	-Not examined, missing

Animal Number: 1R-4638 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, moderate
Lung	-Vascular mineralization, mild
Mammary Gland	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-No diagnosis, inadequate section
Spleen	-Hemosiderosis, mild
Uterus	-Cystic glands, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Thyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Ovary.

Animal Number: 1R-4639 Sex: Female Group: (1) CONTROL 0 ppm
Fate: (Week= 56) Sacrificed in extremis

Macroscopic Observations:

Skin	-Midsternal subcutaneous mass, 8 x 8 x 3 cm.
Liver	-Slightly pale

Microscopic Observations:

Kidney	-Pelvic mineralization, mild
	Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild
Lung	-Hemorrhage, multifocal, mild
Mammary Gland	-Fibroadenoma
Salivary Gland	-Not examined, missing
Spleen	-Hemosiderosis, mild
Uterus	-Within normal limits
	Fewer than protocol number

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Ovary, Pituitary, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Summarized Single Tabulated Animal Report
Individual Macroscopic and Microscopic Observations
Riker Laboratories, Inc. 3M
FM-3924: Two Year Oral Toxicity-Oncogenicity Study in Rats

Table: 2

Animal Number: 1R-3697 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 94) Found Dead

Macroscopic Observations:	
Skin	-Mass, 5 x 4 cm, left side of head.
Spleen	-Dark and enlarged.
Liver	-Mottled
Microscopic Observations:	
Adrenal	-Cortical vacuolation, mild One of pair present
Aorta	-Not examined, missing
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, minimal Portal bile duct proliferation, minimal Hepatocyte vacuolation, diffuse, moderate Megalocytosis, marked
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Lymph Node (mesenteric)	-Hemorrhage, mild
Pancreas	-Not examined, missing
Parathyroid	-Not examined, missing
Pituitary	-Not examined, missing
Prostate	-Not examined, missing
Salivary Gland	-Not examined, missing
Small Intestine	-Within normal limits Fewer than protocol number
Soft Tissues (head)	-Hemangiosarcoma Large neoplasm in connective tissue and muscle from side of head. Solid areas and large cavernous vascular spaces. Infiltrative into surrounding muscle.
Spleen	-Hematopoiesis, extramedullary, increased, mild Hemosiderosis, mild
Thyroid	-Not examined, missing
Trachea	-Not examined, missing
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Large Intestine, Testis/Epididymis, Eye, Heart, Stomach.

Animal Number: 1R-3698 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 68) Found Dead

Macroscopic Observations:	
Skin	-Ulcerated footpads
Liver	-Possibly slightly pale and mottled.
Urinary Bladder	-Distended into abdomen and filled with reddish fluid.
Prostate	-Slightly enlarged and thickened.
Microscopic Observations:	
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, multifocal, mild
	Cystoid degeneration, multifocal, mild
Lung	-Vascular mineralization, mild
Prostate	-Prostatitis, acute, suppurative, marked
Skin	-Pododermatitis, ulcerative, marked
Urinary Bladder	-Cystitis, acute, diffuse, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3700 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Brain	-Dark area, possibly old hemorrhage, on anterior right cerebral hemisphere.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, moderate
Brain	-Astrocytoma, benign
	Large neoplasm with central cavitation.
	Numerous gitter cells in cavity.
Heart	-Myocardial fibrosis, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, minimal
	Cystoid degeneration, multifocal, mild
	Hepatocyte alteration, vacuolated, mild
	Megalocytosis, marked

Animal Number: 1R-3700 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Parathyroid	-Not examined, not in plane of section
Prostate	-Prostatitis, acute, suppurative, minimal
Thyroid	-Cyst, colloid

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Pituitary, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3701 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Subcutaneous mass, 5 x 3 x 5 cm.
Adrenal	-Enlarged
Kidney	-Enlarged, pale and pitted.
Liver	-Pale raised circular lesion, 1.1 cm dia., median lobe.

Microscopic Observations:

Heart	-Myocardial fibrosis, focal, mild
Kidney	-Chronic progressive nephropathy, marked
Liver	-Hepatocyte vacuolation, diffuse, moderate
	Hepatocyte alteration, vacuolated, mild
	Megalocytosis, moderate
	Hyperplastic nodule
Lung	-Vascular mineralization, moderate
	Pneumonia, interstitial, chronic, multifocal, mild
	Alveolar macrophages, mild
Parathyroid	-Hyperplasia, moderate
Pituitary	-Adenoma
Prostate	-Hyperplasia, focal, moderate
Skin	-Fibroma, subcutaneous
	Large solid neoplasm with abundant collagen formation.

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3702 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Eye	-Extensive inflammation in right eye post blood sampling.
Liver	-Mottled
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Eye	-Panophthalmitis, unilateral, marked
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, moderate Megalocytosis, marked
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Perivascular mononuclear infiltrate, mild
Pituitary	-Cyst, pars distalis
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-3703 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 79) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Red mass, 1 x1 cm.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, minimal Sinusoidal ectasia, cortex, minimal
Kidney	-Chronic progressive nephropathy, mild Pyelonephritis, acute, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, minimal
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Hemorrhage, multifocal, mild
Pancreas	-Acinar atrophy, focal, minimal
Pituitary	-Adenoma

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Animal Number: 1R-3703 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 79) Sacrificed in extremis

Microscopic Observations (continued):

Prostate	-Prostatitis, acute, suppurative, mild
Spleen	-Hemosiderosis, mild
Stomach	-Edema, submucosal, moderate
Testis/Epididymis	-Tubule atrophy, spermatogenesis, unilateral, minimal
Thyroid	-Hyperplasia, C cell, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3704 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.9 x 0.7 cm dia.
Kidney	-Enlarged, pale, pitted.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, marked
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Cystoid degeneration, focal, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild
Parathyroid	-Hyperplasia, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, spermatogenesis, bilateral, moderate Polyarteritis, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3705 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Mesentery	-Bloody cystic lesion, 4 x 3 cm dia., possibly tumor or hematoma.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, moderate Sinusoidal ectasia, cortex, moderate Nodular hyperplasia, cortex, focal, moderate
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte alteration, vacuolated, mild Megalocytosis, moderate Hyperplastic nodule
Lung	-Vascular mineralization, mild
Mesentery	-Cyst Gross lesion was large cystic structure with many hemosiderin laden macrophages and mononuclear inflammatory cells within the wall.
Parathyroid	-Not examined, missing
Salivary Gland	-Not examined, missing
Thyroid	-Not examined, missing
Trachea	-No diagnosis, inadequate section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-3706 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Slightly pale
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, mild
Esophagus	-Not examined, missing
Heart	-Myocarditis, chronic nonsuppurative, multifocal, minimal
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, centrilobular, marked Cystoid degeneration, multifocal, mild Megalocytosis, marked

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Animal Number: 1R-3706 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
Pancreas	-Not examined, missing
Pituitary	-Cyst, pars distalis

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3707 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Liver	-Scattered pale foci and pink raised mass, 1 cm dia., in left lateral lobe.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, moderate Cystoid degeneration, focal, minimal Hepatocyte alteration, vacuolated, moderate Megalocytosis, marked Hyperplastic nodule
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Hemorrhage, focal, mild
Lymph Node (mesenteric)	-Hemorrhage, moderate
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3708 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 100) Sacrificed in extremis

Macroscopic Observations:	
Lung	-Left lobe completely consolidated; partial consolidation of right lung.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, local areas, mild Nodular hyperplasia, cortex, focal, mild
Esophagus	-Not examined, missing
Eye	-Malignant lymphoma, histiocytic
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild Malignant lymphoma, histiocytic
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Hemorrhage, multifocal, mild Malignant lymphoma, histiocytic Gross appearance of consolidation due to massive infiltration of neoplastic histiocytic type lymphocytes.
Lymph Node (mesenteric)	-Not examined, missing
Salivary Gland	-Malignant lymphoma, histiocytic
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Pancreas.

Animal Number: 1R-3709 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Scattered yellowish foci.
Microscopic Observations:	
Adrenal	-Nodular hyperplasia, cortex
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, moderate Megalocytosis, mild Hepatocyte alteration, basophilic, mild

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Animal Number: 1R-3709 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3710 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.9 cm dia.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, moderate
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Hepatocyte alteration, vacuolated, mild
	Megalocytosis, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
	Perivascular mononuclear infiltrate, mild
Pituitary	-Adenoma
Thyroid	-Hyperplasia, C cell, mild
	Ultimobranchial cyst

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3712 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Liver	-Appears enlarged and mottled.

Microscopic Observations:

Adrenal	-Cortical vacuolation, multifocal, mild
	Nodular hyperplasia, cortex, focal, mild

Animal Number: 1R-3712 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
Large Intestine	-Nematodiasis, colon
Liver	-Hepatocyte vacuolation, diffuse, moderate Cystoid degeneration, focal, minimal Megalocytosis, marked
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3713 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Adrenal	-Enlarged involving hemorrhagic mass, 2 x 1 cm dia.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild Medullary cell hyperplasia, unilateral, marked Hemorrhage, unilateral, marked Grossly abnormal adrenal completely replaced by encapsulated area of organizing hemorrhage.
Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, diffuse, moderate Cystoid degeneration, focal, mild Megalocytosis, moderate
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Pancreas	-Acinar atrophy, mild Hyperplasia, islet cell, moderate
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-3713 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3716 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 83) Sacrificed in extremis

Macroscopic Observations:

Liver	-Pale
Skin	-Ulcerated mass, 5 x 4 x 3 cm, containing large areas of necrosis involving subcutaneous and muscle tissue in area, possibly tumor or chronic abscess.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild Nodular hyperplasia, cortex, focal, minimal
Brain	-Metastatic neoplasm Multiple small emboli of Zymbal gland carcinoma in meningeal vessels.
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal bile duct proliferation, minimal Hepatocyte vacuolation, diffuse, marked Megalocytosis, moderate
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Perivascular mononuclear infiltrate, mild
Pancreas	-Acinar atrophy, moderate
Soft Tissues (head)	-Zymbal gland carcinoma Large neoplasm, infiltrative, with extensive necrosis. Squamous metaplasia. Origin from Zymbal gland clearly evident.
Stomach	-Edema, submucosal, moderate
Testis/Epididymis	-Vascular mineralization, focal, minimal Leydig cell hyperplasia, focal, minimal
Thyroid	-Cyst, colloid

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Spleen, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

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Animal Number: 1R-3717 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised mass, 0.5 cm dia.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Megalocytosis, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Mineralization, tubular, mild
Thyroid	-Hyperplasia, C cell, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3718 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Hemorrhagic lesion, 0.3 cm dia.
Liver	-Mottled
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild
	Hepatocyte vacuolation, diffuse, moderate
	Megalocytosis, marked
	Hepatocyte alteration, basophilic, moderate
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, focal, minimal
Pancreas	-Islet cell adenoma
Pituitary	-Adenoma
Thyroid	-Follicular hyperplasia, cystic, unilateral, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

001782

Table: 2

Animal Number: 1R-3719 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 62) Sacrificed in extremis

Macroscopic Observations:	
Skin	-Large subcutaneous mass in ventral cervical area, 5 x 6 x 6 cm; multiple cysts containing dark red fluid within mass.
Liver	-Slightly pale
Abdomen (internal)	-Stomach and small intestine gas filled.
Kidney	-Rough surface with patchy pale areas.
Microscopic Observations:	
Kidney	-Pigment, conv. tub. epithelium, moderate Nephrosis, tubular, moderate
Liver	-Hepatocyte vacuolation, multifocal, mild Necrosis, focal, mild Hematopoiesis, extramedullary, mild
Lung	-Vascular mineralization, mild Hemorrhage, local areas, moderate Metastatic neoplasm
Skin	-Fibrosarcoma, subcutaneous Well differentiated neoplasm with moderate collagen formation. Large areas of necrosis.
Spleen	-Hematopoiesis, extramedullary, increased, marked
Thyroid	-Ultimobranchial cyst

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3723 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Enlarged with scattered pale foci.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, moderate Hepatocyte alteration, vacuolated, mild Megalocytosis, marked

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Animal Number: 1R-3723 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
Spleen	-Hemosiderosis, mild
Trachea	-Tracheitis, chronic, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3724 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 82) Sacrificed in extremis

Macroscopic Observations:

Skin	-Large, subcutaneous mass, 7 x 6 x 5 cm, in left inguinal area; completely surrounding left hindlimb. Mass very firm, hard and gritty upon cutting, boney in appearance.
Lung	-Raised, whitish, circular mass, 0.6 cm dia., left lobe; raised circular lesion, 0.3 cm dia., in right diaphragmatic lobe.
Spleen	-Enlarged
Abdomen (internal)	-Hard, boney, multilobular mass, 2.5 x 2 x 2 cm, in omentum.
Kidney	-Hydronephrosis, left
Liver	-Small whitish lesion, 0.2 cm dia., median lobe; small pale yellowish lesion, 0.4 cm dia., left lateral lobe.

Microscopic Observations:

Aorta	-Not examined, missing
Bone	-Osteosarcoma, hindleg Large neoplasm with abundant new osteoid and bone formation.
Heart	-Myocardial fibrosis, focal, mild
Kidney	-Chronic progressive nephropathy, mild Hydronephrosis, unilateral, moderate Nephrosis, tubular, moderate
Liver	-Hepatocyte vacuolation, centrilobular, moderate Megalocytosis, mild Malignant lymphoma, lymphocytic Two grossly described nodules composed of large lymphoblastic cells with vesicular nuclei and high mitotic activity. Different from osteosarcoma cells.

Animal Number: 1R-3724 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 82) Sacrificed in extremis

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Hemorrhage, local areas, moderate
	Metastatic neoplasm
	Multiple metastases of osteosarcoma throughout lung.
Parathyroid	-Hyperplasia, mild
Spleen	-Hematopoiesis, extramedullary, increased, mild
Thyroid	-C cell adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Testis/Epididymis, Prostate, Pituitary, Adrenal, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3725 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Eye	-Extensive inflammation of right eye afer blood sampling.
Bone	-Left rear metatarsal joint swollen.

Microscopic Observations:

Bone	-Arthritis, synovitis; joints, hindleg, moderate
Eye	-Panophthalmitis, unilateral, marked
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Cystoid degeneration, focal, mild
	Megalocytosis, moderate
Lung	-Vascular mineralization, minimal
	Alveolar macrophages, mild
	Fewer than protocol number
Parathyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea,

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Animal Number: 1R-3725 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-3726 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised hemorrhagic lesion, 0.4 cm dia.
Liver	-Small scattered pale foci.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, minimal
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, vacuolated, moderate Megalocytosis, moderate
Lung	-Vascular mineralization, mild Hemorrhage, multifocal, mild Adenoma Small papillary neoplasm near hilus. Well differentiated.
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Vascular mineralization, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Parathyroid, Trachea, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3728 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Pale raised mass, 1.3 x 0.8 cm, anterior right lateral lobe.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, local areas, moderate Nodular hyperplasia, cortex, multifocal, moderate Medullary cell hyperplasia, focal, mild

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Animal Number: 1R-3728 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, centrilobular, moderate Cystoid degeneration, focal, mild Megalocytosis, moderate Hyperplastic nodule Large lesion with good preservation of lobular structure. Most cells of nodule vacuolated.
Lung	-Vascular mineralization, mild Hemorrhage, diffuse, moderate Fewer than protocol number
Pancreas	-Acinar atrophy, moderate
Pituitary	-Not examined, missing
Spleen	-Hemosiderosis, mild
Thyroid	-Follicular hyperplasia, cystic, unilateral, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3729 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 84) Sacrificed in extremis

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, mild Necrosis, multifocal, mild Megalocytosis, marked Pigment, portal, mild
Lung	-Vascular mineralization, mild Hemorrhage, local areas, mild
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild

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Animal Number: 1R-3729 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 84) Sacrificed in extremis

Microscopic Observations (continued):

Testis/Epididymis	-Vascular mineralization, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3730 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.6 cm dia.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, mild Sinusoidal ectasia, cortex, minimal
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild Pigment, parenchymal, minimal
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Pigment, mild
Pancreas	-Not examined, missing
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-3731 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Sacrificed in extremis

Macroscopic Observations:

Small Intestine	-Spherical mass, dark, 0.5 cm dia., near beginning of jejunum, attached to outside wall.
Stomach	-Enlarged gastric rugae with erosions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, multifocal, mild

Animal Number: 1R-3731 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Sacrificed in extremis

Microscopic Observations (continued):

Kidney	-Calculus, pelvic
Liver	-Hepatocyte vacuolation, multifocal, mild Cystoid degeneration, multifocal, mild Megalocytosis, moderate
Lung	-Vascular mineralization, mild Hemorrhage, multifocal, mild
Pancreas	-Islet cell adenoma Encapsulated, well differentiated tumor. (Gross lesion.)
Parathyroid	-Not examined, not in plane of section
Spleen	-Hemosiderosis, mild
Stomach	-Necrosis, mucosal, moderate
Thyroid	-Hyperplasia, C cell, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3734 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 45) Found Dead

Macroscopic Observations: *

Kidney	-Bilateral marked hydronephrosis.
Spleen	-Appears smaller
Urinary Bladder	-Expanded with hard calculi measuring about 0.8 cm dia.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, focal, mild
Eye	-Not examined, missing
Kidney	-Pyelonephritis, acute, moderate Hydronephrosis, bilateral, moderate
Large Intestine	-Not examined, missing
Liver	-Megalocytosis, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Not examined, missing
Preputial Gland	-Preputial adenitis, acute, marked
Salivary Gland	-Not examined, missing
Small Intestine	-Not examined, missing

* ADDITIONAL MACROSCOPIC OBSERVATIONS: HAIR - WET AND MATTED AROUND PERINEAL AREA. ALSO AROUND MOUTH - BROWNISH IN COLOR; PRIOR SIGN OF ULCERATED MASS (L) INGUINAL IS A NEARLY HEALED HOLE NEAR THE PENIS. F J Sibinski 7/14/88
STUDY DIRECTOR

Species: Rat
Project Number: 02B1CR0012

Animal Number: 1R-3734 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 45) Found Dead

Microscopic Observations (continued):

Spleen	-Hemosiderosis, moderate
	Atrophy, moderate
Urinary Bladder	-Epithelial hyperplasia, papillary, diffuse, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Aorta, Testis/Epididymis, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus.

Animal Number: 1R-3735 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 52) Found Dead

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Eye	-Not examined, missing
Kidney	-Mineralization, tubular, mild
Large Intestine	-Not examined, missing
Liver	-Necrosis, centrilobular, marked
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Small Intestine	-Not examined, missing
Testis/Epididymis	-Vascular mineralization, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Urinary Bladder, Aorta, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland.

Animal Number: 1R-3738 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Thyroid	-Possibly slightly enlarged.
Pituitary	-Hemorrhagic lesion, 0.4 cm dia.
Liver	-Scattered pale foci.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, minimal
	Nodular hyperplasia, cortex, focal, minimal
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild

Animal Number: 1R-3738 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, minimal
	Pyelonephritis, acute, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Cystoid degeneration, multifocal, mild
	Hepatocyte alteration, vacuolated, moderate
	Hepatocyte alteration, basophilic, moderate
	Megalocytosis, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Thyroid	-Not examined, missing
Trachea	-Cyst, subepithelial

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3739 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.5 cm dia.
Liver	-Scattered pale foci.
Adrenal	-Right adrenal greatly enlarged due to 2 cm dia. mass.

Microscopic Observations:

Adrenal	-Atrophy, cortical, marked
	Carcinoma, cortical, unilateral
	Large, well differentiated, high mitotic activity, extensive necrosis. Marked secondary atrophy of cortex in contralateral gland. Multiple metastases.
Heart	-Myocardial fibrosis, local areas, mild
	Myocarditis, chronic nonsuppurative, local areas, mild
Kidney	-Chronic progressive nephropathy, marked
Liver	-Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
	Metastatic neoplasm

Animal Number: 1R-3739 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
	Metastatic neoplasm
	Hemorrhage, local areas, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
	Metastatic neoplasm
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3740 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, mild
	Pyelonephritis, acute, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Megalocytosis, moderate
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, focal, mild
Trachea	-Cyst, subepithelial

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3741 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, minimal
	Sinusoidal ectasia, cortex, mild

Animal Number: 1R-3741 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Hemorrhage, minimal
Pancreas	-Acinar atrophy, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Trachea	-Cyst, subepithelial

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-3742 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 77) Sacrificed in extremis

Macroscopic Observations:

Skin	-Healing ulceration on left rear footpad.
Liver	-Appears somewhat pale and mottled; possible area of infarction in right lateral lobe.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, minimal Hyperplasia, pelvic epithelium, local areas, mild
Liver	-Hepatocyte vacuolation, diffuse, marked Necrosis, diffuse, marked Necrosis, centrilobular, mild Megalocytosis, moderate
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Hemorrhage, local areas, mild
Lymph Node (mesenteric)	-Not examined, missing
Skin	-Pododermatitis, ulcerative, hindleg, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3743 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 95) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised dark mass, 1 cm dia.
Liver	-Pale and mottled.
Testis/Epididymis	-Appear small
Microscopic Observations:	
Adrenal	-Cortical vacuolation, multifocal, mild Nodular hyperplasia, cortex, multifocal, mild Atrophy, cortical, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal bile duct proliferation, mild Hepatocyte vacuolation, periportal, moderate
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Pituitary	-Adenoma
Prostate	-Not examined, missing
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, bilateral, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3744 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Skin	-Raised ulcerated inflamed lesion on right hind footpad.
Pituitary	-Small, raised dark lesion, 0.4 cm dia.
Liver	-Circular pale lesion, 0.4 cm dia., median lobe.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, local areas, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hyperplastic nodule
Lung	-Vascular mineralization, mild Alveolar macrophages, mild

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Animal Number: 1R-3744 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Pododermatitis, ulcerative, hindleg, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Thyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3745 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 14) Found Dead

Macroscopic Observations:

Heart	-Possibly slightly enlarged.
Spleen	-Possibly slightly small.
Kidney	-Possible hydronephrosis of right kidney.
Testis/Epididymis	-Possibly slightly enlarged.

Microscopic Observations:

Aorta	-Not examined, missing
Kidney	-Hydronephrosis, unilateral, moderate
Liver	-Megalocytosis, mild
Lung	-Hemorrhage, perivascular, moderate
Pancreas	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Spleen	-Atrophy, mild
Urinary Bladder	-Hemorrhage, focal, mild Epithelial hyperplasia, simple, diffuse, mild Cystitis, acute, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3746 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Small dark lesion.
Microscopic Observations:	
Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, moderate
	Cystoid degeneration, multifocal, moderate
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Testis/Epididymis	-Vascular mineralization, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3749 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 69) Found Dead

Macroscopic Observations:	
Urinary Bladder	-Hematuria
Liver	-Mottled
Lung	-Hyperemic
Microscopic Observations:	
Adrenal	-Within normal limits
	One of pair present
Aorta	-Not examined, missing
Eye	-Phthsis bulbi, unilateral, marked
Heart	-Myocarditis, chronic nonsuppurative,
	multifocal, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Necrosis, centrilobular, moderate
	Megalocytosis, moderate
Lung	-Vascular mineralization, mild
Pancreas	-Not examined, missing
Pituitary	-Not examined, missing
Prostate	-Not examined, missing
Spleen	-Hemosiderosis, mild
	Atrophy, mild
Stomach	-Necrosis, mucosal, moderate
Testis/Epididymis	-Within normal limits
	One of pair present

Animal Number: 1R-3749 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 69) Found Dead

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Small Intestine, Large Intestine, Urinary Bladder, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland.

Animal Number: 1R-3750 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 75) Sacrificed in extremis

Macroscopic Observations:	
Liver	-Raised, 1.5 cm dia. nodule in left lateral lobe.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild Nodular hyperplasia, cortex, focal, mild
Heart	-Myocarditis, chronic nonsuppurative, focal, minimal
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Necrosis, multifocal, mild Megalocytosis, marked Hepatocellular carcinoma Large well differentiated neoplasm. Solid, moderate mitotic activity.
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Prostate	-Not examined, missing
Salivary Gland	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Pituitary, Large Intestine, Thyroid, Trachea, Esophagus, Pancreas, Eye.

Animal Number: 1R-3751 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Esophagus	-Not examined, missing

Animal Number: 1R-3751 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Heart	-Myocarditis, chronic nonsuppurative, local areas, mild
Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, moderate Cystoid degeneration, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-Not examined, missing
Trachea	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Adrenal, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Prostate.

Animal Number: 1R-3752 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Liver	-Pale, raised lesion, 0.7 cm dia., in right lateral lobe.

Microscopic Observations:

Heart	-Myocarditis, chronic nonsuppurative, focal, minimal
Kidney	-Chronic progressive nephropathy
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocellular carcinoma Megalocytosis, minimal
Lung	-Vascular mineralization, mild Hemorrhage, local areas, moderate
Pancreas	-Acinar atrophy, marked Islet cell carcinoma Moderately pleomorphic, encapsulated, with infiltration of capsule by tumor cells. Vascular invasion.

Animal Number: 1R-3752 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Parathyroid	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Adrenal, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-3753 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 94) Sacrificed in extremis

Macroscopic Observations:

Spleen	-Enlarged
Liver	-Enlarged and mottled with a circular raised lesion, 1.7 cm dia., on one median lobe and another circular lesion, 0.8 cm dia. on the other median lobe.
Testis/Epididymis	-Right testis small.
Thymus	-Dark hemorrhagic lesion, 1.5 x 1 cm.

Microscopic Observations:

Adrenal	-Malignant lymphoma, lymphocytic
Brain	-Malignant lymphoma, lymphocytic Large, hemorrhagic lesion with malacia in cerebellum.
Heart	-Malignant lymphoma, lymphocytic
Kidney	-Malignant lymphoma, lymphocytic
Liver	-Hepatocyte vacuolation, centrilobular, marked Malignant lymphoma, lymphocytic Megalocytosis, moderate Necrosis, centrilobular, moderate
Lung	-Malignant lymphoma, lymphocytic Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Hemorrhage, moderate Malignant lymphoma, lymphocytic
Pancreas	-Acinar atrophy, moderate Adenoma Malignant lymphoma, lymphocytic
Salivary Gland	-Not examined, missing
Spleen	-Malignant lymphoma, lymphocytic
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, marked

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Animal Number: 1R-3753 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 94) Sacrificed in extremis

Microscopic Observations (continued):

Thymus	-Malignant lymphoma, lymphocytic Thymus markedly enlarged by neoplastic infiltrate and hemorrhage.

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Thyroid, Parathyroid, Trachea, Esophagus, Eye.

Animal Number: 1R-3754 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised mass, 0.5 cm dia.
Thyroid	-Possibly slightly enlarged.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Chronic progressive nephropathy, moderate
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, moderate Necrosis, focal, minimal Megalocytosis, mild
Lung	-Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Pancreas	-Hyperplasia, islet cell, mild
Pituitary	-Adenoma
Testis/Epididymis	-Polyarteritis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-3755 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Skin	-Circular raised inflamed lesions on right and left hind footpads.
Thyroid	-Possibly slightly enlarged.
Pituitary	-Small dark lesion.
Testis/Epididymis	-Right testis small.

Animal Number: 1R-3755 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Adrenal	-Cortical vacuolation, multifocal, mild
	Sinusoidal ectasia, cortex, mild
	Nodular hyperplasia, cortex, focal, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Cystoid degeneration, focal, mild
	Megalocytosis, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Skin	-Pododermatitis, ulcerative, hindleg, bilateral, marked
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Thyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3756 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Enlarged, 0.8 cm in diameter

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, mild
	Sinusoidal ectasia, cortex, focal, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild
	Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Sinusoidal ectasia, moderate

Animal Number: 1R-3756 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Sacrificed in extremis

Microscopic Observations (continued):

Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Small Intestine, Large Intestine, Aorta, Testis/Epididymis, Prostate, Thyroid, Parathyroid, Trachea, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3757 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 98) Sacrificed in extremis

Macroscopic Observations:

Eye	-Opacity of right eye.
Pituitary	-Hemorrhagic mass, 1 x 0.8 cm dia.

Microscopic Observations:

Eye	-Phthsis bulbi, unilateral
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, minimal
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-C cell carcinoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Adrenal, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-3758 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

-No visible lesions.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, moderate Nodular hyperplasia, cortex, focal, mild

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Animal Number: 1R-3758 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
	Hydronephrosis, bilateral, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Necrosis, multifocal, mild
	Megalocytosis, moderate
	Pigment, multifocal, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Lymph Node (mesenteric)	-Hemorrhage, minimal
Testis/Epididymis	-Vascular mineralization, mild
Trachea	-Tracheitis, chronic, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Prostate, Pituitary, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3759 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Circular mass, 0.5 cm dia.

Microscopic Observations:

Kidney	-Chronic progressive nephropathy, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Cystoid degeneration, focal, mild
	Hepatocyte alteration, vacuolated, mild
	Megalocytosis, moderate
	Hepatocyte vacuolation, multifocal, moderate
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Alveolar macrophages, moderate
	Perivascular mononuclear infiltrate, mild
	Hemorrhage, local areas, marked
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Testis/Epididymis	-Tubule atrophy, aspermatogenesis, unilateral, mild

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Animal Number: 1R-3759 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Microscopic Observations (continued):

Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Prostate, Adrenal, Thyroid, Parathyroid, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-3760 Sex: Male Group: (2) FM-3924 100 ppm
Fate: (Week= 106) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Medullary cell hyperplasia, focal, mild
Heart	-Myocardial fibrosis, focal, mild Myocarditis, chronic nonsuppurative, multifocal, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, mild Hepatocyte vacuolation, multifocal, moderate Necrosis, multifocal, mild Megalocytosis, moderate
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Alveolar macrophages, mild
Pancreas	-Hyperplasia, islet cell, moderate
Parathyroid	-Not examined, missing
Thyroid	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Testis/Epididymis, Prostate, Pituitary, Trachea, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4756 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 80) Sacrificed in extremis

Macroscopic Observations:	
Mammary Gland	-Ulcerated multilobular mass, 5 x 2.5 x 1 cm, right axilla; pale mass, 2 x 1 cm, right inguinal area.
Pituitary	-Hemorrhagic mass, 0.7 cm dia.
Adrenal	-Left adrenal enlarged, 1 cm dia.
Eye	-Atrophy of left eye
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked
Eye	-Phthsis bulbi, unilateral
Liver	-Hematopoiesis, extramedullary, mild Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild Metastatic neoplasm
Mammary Gland	-Adenocarcinoma Three sections of tumor present. All of a well differentiated ductular neoplasm with necrosis and vascular invasion. Lung metastases similar to primary.
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hematopoiesis, extramedullary, increased, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4758 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 89) Found Dead

Macroscopic Observations:	
Pituitary	-Raised hemorrhagic mass, 1.5 x 1 cm.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Esophagus	-Not examined, missing
Eye	-Not examined, missing
Kidney	-Pelvic mineralization, moderate Calculus, pelvic
Large Intestine	-Not examined, missing

Animal Number: 1R-4758 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 89) Found Dead

Microscopic Observations (continued):

Liver	-Portal bile duct proliferation, mild
	Hepatocyte vacuolation, diffuse, moderate
Lung	-Alveolar macrophages, mild
	Pneumonia, acute exudative, local areas, mild
	Vascular mineralization, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Not examined, missing
Ovary	-Not examined, missing
Pancreas	-Hyperplasia, islet cell, mild
Parathyroid	-Not examined, missing
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Small Intestine	-Not examined, missing
Spleen	-Hemosiderosis, moderate
Thyroid	-Not examined, missing
Uterus	-Not examined, missing

The following tissues were found to be within normal limits:
Spinal Cord, Bone Marrow, Heart, Stomach, Urinary Bladder, Aorta, Trachea, Brain.

Animal Number: 1R-4759 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Mass, 4 x 3 cm, left axilla; 6 x 5 x 2 cm, right inguinal area.
Liver	-Appears mottled

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, marked
Kidney	-Pigment, conv. tub. epithelium, mild
Liver	-Hepatocyte vacuolation, periportal, moderate
	Megalocytosis, mild
Lung	-Hemorrhage, local areas, mild
	Vascular mineralization, mild
Mammary Gland	-Fibroadenoma
	Fibroadenoma
Ovary	-Tubular hyperplasia, bilateral, moderate
Pancreas	-Acinar atrophy, mild
Pituitary	-Adenoma
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4759 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4762 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.8 cm dia.
Liver	-Dark in color; raised circular lesion, 1.5 cm dia., median lobe; circular lesion, 1 cm dia., right anterior lobe; circular lesion, 0.9 cm dia., caudate lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Chronic progressive nephropathy, mild Pigment, conv. tub. epithelium, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, moderate Hepatocyte alteration, vacuolated, mild Hyperplastic nodule Megalocytosis, moderate
Lung	-Hemorrhage, multifocal, mild Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Alveolar macrophages, moderate Perivascular mononuclear infiltrate, moderate
Ovary	-Tubular hyperplasia, bilateral, moderate
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-C cell adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Mammary Gland, Trachea, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Table: 2

Animal Number: 1R-4764 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Large hemorrhagic mass, 1.2 cm dia.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild
Large Intestine	-Nematodiasis, colon
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, mild
Lymph Node (mesenteric)	-Hemorrhage, moderate
Ovary	-Tubular hyperplasia, bilateral, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Small Intestine, Urinary Bladder, Aorta, Uterus, Mammary Gland, Trachea, Thyroid, Parathyroid, Pancreas, Salivary Gland, Eye, Stomach.

Animal Number: 1R-4765 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Clear fluid filled cyst, 0.5 cm dia.
Liver	-Appears mottled
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, local areas, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, not in plane of section
Thyroid	-Hyperplasia, C cell, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Mammary Gland, Pituitary, Adrenal, Eye, Spleen.

Animal Number: 1R-4766 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Pelvic mineralization, minimal
	Pigment, conv. tub. epithelium, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, moderate
	Pigment, hepatocyte, mild
Lung	-Alveolar macrophages, mild
	Hemorrhage, multifocal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4767 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised mass, 1 cm dia.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Pelvic mineralization, mild
Liver	-Hepatocyte vacuolation, diffuse, moderate
	Cystoid degeneration, multifocal, mild
	Megalocytosis, moderate
	Hematopoiesis, extramedullary, mild
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
Ovary	-Tubular hyperplasia, unilateral, mild
	Cyst, unilateral
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Table: 2

Animal Number: 1R-4768 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Eye	-Right eye inflamed and cloudy.
Pituitary	-Mass, 0.7 cm dia.
Liver	-Slightly pale and mottled.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, local areas, marked Sinusoidal ectasia, cortex, mild
Eye	-Panophthalmitis, unilateral, marked
Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, periportal, moderate Megalocytosis, mild
Ovary	-Tubular hyperplasia, bilateral, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Thyroid	-Follicular hyperplasia, cystic, unilateral, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Mammary Gland, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4769 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Mammary Gland	-Mass, 6 x 4 x 2 cm in left axilla; 6 x 4 x 2 cm, in left inguinal area.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Chronic progressive nephropathy, mild
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild Hepatocyte alteration, basophilic, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, mild Hemorrhage, local areas, mild
Mammary Gland	-Fibroadenoma Adenocarcinoma
Ovary	-Tubular hyperplasia, bilateral, moderate
Pituitary	-Adenoma

Animal Number: 1R-4769 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Uterus	-Hydrometra, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4770 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Mass, 4 x 4 x 1 cm, in throat area.
Liver	-Appears mottled

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Liver	-Hepatocyte vacuolation, periportal, moderate Megalocytosis, moderate Pigment, hepatocyte, minimal
Lung	-Vascular mineralization, mild Alveolar macrophages, moderate Perivascular mononuclear infiltrate, mild
Mammary Gland	-Fibroadenoma
Pancreas	-Acinar adenoma
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Animal Number: 1R-4771 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 91) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.8 cm dia.
Liver	-Appears dark brown in color with multiple pale foci on all lobes.

Microscopic Observations:

Adrenal	-Cortical vacuolation, mild Sinusoidal ectasia, cortex, mild

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Animal Number: 1R-4771 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 91) Sacrificed in extremis

Microscopic Observations (continued):

Kidney	-Pelvic mineralization, minimal
	Vacuolation, conv. tub. epithelium, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, periportal, moderate
Lung	-Vascular mineralization, mild
	Alveolar macrophages, mild
	Perivascular mononuclear infiltrate, mild
	Hemorrhage, diffuse, marked
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4772 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Liver	-Circular mass, 2 x 1.2 cm, in right posterior.

Microscopic Observations:

Adrenal	-Cortical vacuolation, mild
	Sinusoidal ectasia, cortex, marked
Kidney	-Chronic progressive nephropathy, minimal
	Pelvic mineralization, minimal
Liver	-Megalocytosis, moderate
	Hyperplastic nodule
	Hepatocellular adenoma
	Large tumor with areas of necrosis. Tumor cells large, many vacuolated.
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Galactocele
Parathyroid	-Hyperplasia, multifocal, mild
Thyroid	-Hyperplasia, C cell, multifocal, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4772 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Trachea, Esophagus, Salivary Gland, Eye, Pancreas.

Animal Number: 1R-4773 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Small ulcerated mass, 2 cm dia., on right side.
Liver	-Pale, slightly raised mass, 3 x 2 cm, in median lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, marked
Kidney	-Pigment, conv. tub. epithelium, brown, minimal
Large Intestine	-Nematodiasis, colon
Liver	-Hyperplastic nodule Hepatocyte alteration, vacuolated, multifocal, mild Megalocytosis, moderate Hepatocyte vacuolation, multifocal, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, multifocal, mild Perivascular mononuclear infiltrate, minimal
Lymph Node (mesenteric)	-Hemorrhage, mild
Mammary Gland	-Adenocarcinoma, ductal Adenocarcinoma, ductal Both gross lesions were adenocarcinomas. One was ulcerated.
Ovary	-Cyst, follicular, unilateral
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4774 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 92) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised hemorrhagic mass, 1.1 cm dia.
Liver	-Somewhat pale and mottled.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, unilateral, mild
Kidney	-Pelvic mineralization, minimal
	Pyelitis, acute, mild
	Vacuolation, conv. tub. epithelium, mild
Liver	-Portal mononuclear cell infiltrate, minimal
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, diffuse, marked
	Megalocytosis, moderate
	Necrosis, focal, mild
Lung	-Vascular mineralization, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Urinary Bladder	-Epithelial hyperplasia, simple, diffuse, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4776 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Ovary	-Hemorrhagic cyst, 1 cm dia., right ovary.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, unilateral,
	marked
Esophagus	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild
Liver	-Portal mononuclear cell infiltrate, minimal
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
	Hyperplastic nodule
Lung	-Vascular mineralization, mild
Ovary	-Cyst, follicular, bilateral
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4776 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Pituitary, Trachea, Thyroid, Parathyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Mammary Gland, Uterus.

Animal Number: 1R-4777 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 82) Found Dead

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.6 x 0.9 cm.

Microscopic Observations:

Eye	-Not examined, missing
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Pneumonia, acute exudative, local areas, mild Hemorrhage, multifocal, mild
Pancreas	-Acinar atrophy, local areas, moderate
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland.

Animal Number: 1R-4778 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, minimal
Large Intestine	-Nematodiasis, colon
Liver	-Portal mononuclear cell infiltrate, minimal Megalocytosis, mild Hepatocyte vacuolation, multifocal, moderate Portal bile duct proliferation, mild
Lung	-Alveolar macrophages, focal, mild Perivascular mononuclear infiltrate, focal, mild

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Animal Number: 1R-4778 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4781 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 51) Sacrificed in extremis

Macroscopic Observations:

Spleen	-Appears small
Liver	-Small pale foci, approximately 0.2 cm dia., in left lateral lobe.
Large Intestine	-Beginning with the rectum, the colon, cecum and ileum are enlarged and filled with fecal material. Section of rectum appears enlarged and thickened.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, minimal
Large Intestine	-Leiomyosarcoma Large well differentiated tumor. Moderate nuclear pleomorphism. Invades mucosa.
Liver	-Megalocytosis, moderate Necrosis, multifocal, mild
Lung	-Alveolar macrophages, focal, mild
Lymph Node (mesenteric)	-Hemorrhage, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4784 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Mammary Gland	-Lobular mass, 2 x 1 x 1 cm, in left inguinal area.
Liver	-Multiple pale foci in left lateral lobe.

Microscopic Observations:

Kidney	-Pelvic mineralization, minimal Metastatic neoplasm

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Animal Number: 1R-4784 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, minimal Alveolar macrophages, multifocal, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Adenocarcinoma Highly cellular, cystic areas. Lymphatic invasion. Metastatic to capsular surface of one kidney.
Ovary	-Tubular hyperplasia, bilateral, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Sialadenitis, chronic, moderate
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Adrenal, Thyroid, Esophagus, Pancreas, Eye.

Animal Number: 1R-4786 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 102) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Dark raised hemorrhagic mass, 1 cm dia.
Mammary Gland	-Lobulated mass, 1 cm dia., in right axilla; similar mass in left inguinal area.
Liver	-Raised mass, 3 x 1.5 cm, in right lateral lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Aorta	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, periportal, moderate Megalocytosis, mild Hepatocellular carcinoma Well differentiated, trabecular pattern. Areas of necrosis. Moderate mitotic activity.

Animal Number: 1R-4786 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 102) Sacrificed in extremis

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild
	Alveolar macrophages, multifocal, mild
Mammary Gland	-Adenocarcinoma
	Fibroadenoma
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, moderate
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Ovary, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4789 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 93) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 0.7 cm dia.
Liver	-Scattered small pale foci in most lobes.

Microscopic Observations:

Adrenal	-Cortical vacuolation, focal, unilateral, mild
	Sinusoidal ectasia, cortex, focal, unilateral, moderate
	Nodular hyperplasia, cortex, focal, unilateral, mild
Kidney	-Vacuolation, conv. tub. epithelium, minimal
Liver	-Hepatocyte vacuolation, periportal, mild
	Megalocytosis, moderate
	Necrosis, multifocal, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Alveolar macrophages, focal, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Stomach	-Gastritis, acute, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Pancreas,

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Animal Number: 1R-4789 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 93) Sacrificed in extremis

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Salivary Gland, Eye.

Animal Number: 1R-4790 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 76) Sacrificed in extremis

Macroscopic Observations:

Mammary Gland	-Large mass, 7 x 8 x 2.5 cm in right inguinal area; ulcerated, bleeding area on surface. Upon incision, mass found to contain cystic areas.

Microscopic Observations:

Adrenal	-Not examined, missing
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, focal, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Adenocarcinoma, cystic
Ovary	-Not examined, missing
Pancreas	-Not examined, missing
Parathyroid	-Not examined, missing
Pituitary	-Not examined, missing
Salivary Gland	-Not examined, missing
Spinal Cord	-Not examined, lost during processing
Thyroid	-Not examined, missing
Trachea	-Not examined, missing
Uterus	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Eye.

Animal Number: 1R-4791 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 65) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Reddish mass, 1 x 0.8 cm.
Microscopic Observations:	
Kidney	-Vacuolation, conv. tub. epitheium, minimal
Liver	-Hepatocyte vacuolation, periportal, mild
	Megalocytosis, mild
	Hyperplastic nodule
Lung	-Vascular mineralization, mild
	Pelvic mineralization, mild
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4792 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Mammary Gland	-Mass, 2 cm dia., in right axilla; multilobular mass, 4 x 3 x 2 cm, in perineal area.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Pelvic mineralization, mild
Liver	-Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
	Pigment, brown, hepatocytes, minimal
	Hyperplastic nodule
Lung	-Vascular mineralization, mild
	Alveolar macrophages, local areas, moderate
Mammary Gland	-Fibroadenoma
Pancreas	-Acinar atrophy, focal, mild
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Salivary Gland, Eye.

Table: 2

Animal Number: 1R-4794 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Hemorrhagic mass, 0.3 cm dia.
Microscopic Observations:	
Kidney	-Pelvic mineralization, marked
Liver	-Hepatocyte vacuolation, multifocal, mild
	Cystoid degeneration, local areas, mild
	Hepatocyte alteration, vacuolated, multifocal, mild
	Megalocytosis, moderate
	Hepatocyte alteration, basophilic, focal, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Uterus	-Cystic glands, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Lung, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Trachea, Adrenal, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4795 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Raised pale mass, 2 cm, dia., in left lateral lobe.
Mammary Gland	-Necrotic, inflamed milk cysts, neck and perineal areas; mass, 3 x 2 cm, inguinal area.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild
	Sinusoidal ectasia, cortex, mild
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, mild
Liver	-Portal bile duct proliferation, mild
	Megalocytosis, mild
	Hepatocellular adenoma
Lung	-Vascular mineralization, mild
	Alveolar macrophages, local areas, moderate
	Hemorrhage, local areas, mild
Mammary Gland	-Adenocarcinoma, cystic
	Adenocarcinoma

Animal Number: 1R-4795 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Ovary	-Cyst, follicular
Spleen	-Hemosiderosis, moderate
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Pituitary, Trachea, Thyroid, Parathyroid, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4796 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, multifocal, moderate Megalocytosis, moderate
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Pituitary, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4797 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Liver	-Appears pale and mottled.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, diffuse, moderate Megalocytosis, marked
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Polyarteritis, moderate
Pituitary	-Adenoma
Thyroid	-Hyperplasia, C cell, focal, mild

Animal Number: 1R-4797 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4798 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
	-No visible lesions.
Microscopic Observations:	
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, moderate
Lung	-Vascular mineralization, mild
	Alveolar macrophages, focal, mild
	Perivascular mononuclear infiltrate, mild
	Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Hemorrhage, moderate
Mammary Gland	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Small Intestine	-Ulcer

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Trachea, Adrenal, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4799 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 70) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Enlarged, 0.8 cm dia.
Microscopic Observations:	
Adrenal	-Cortical vacuolation, focal, mild
Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, periportal, moderate
	Megalocytosis, mild
Lung	-Hemorrhage, multifocal, mild
	Perivascular mononuclear infiltrate, mild

Animal Number: 1R-4799 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 70) Sacrificed in extremis

Microscopic Observations (continued):

Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Pancreas, Eye.

Animal Number: 1R-4800 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Skin	-Hair loss on abdomen.
Mammary Gland	-Mass in right axilla, 1 cm dia.; mass in left axilla, 3 x 2 cm.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, mild Hyperplasia, pelvic epithelium, mild
Liver	-Megalocytosis, mild
Lung	-Pneumonia, interstitial, chronic, multifocal, mild
Mammary Gland	-Adenocarcinoma Adenocarcinoma
Ovary	-Tubular hyperplasia, bilateral, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4801 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 94) Sacrificed in extremis

Macroscopic Observations:	
Pituitary	-Raised red mass, 1 cm dia.
Microscopic Observations:	
Liver	-Hepatocyte vacuolation, local areas, moderate Megalocytosis, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, local areas, moderate Hemorrhage, multifocal, mild
Lymph Node (mesenteric)	-Not examined, missing
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4802 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Hemorrhagic mass, 0.7 cm dia.
Liver	-Raised pale circular lesion, 0.7 cm dia., in median lobe; multiple raised pale lesions, 0.5 - 1 cm, in left lateral lobe.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Eye	-Retinal atrophy, multifocal, mild
Kidney	-Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild Hepatocellular adenoma Hepatocellular adenoma
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Mammary Gland	-Galactocele
Pituitary	-Adenoma
Spleen	-Hemosiderosis, moderate
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4802 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Ovary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4803 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, minimal
Kidney	-Chronic progressive nephropathy, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild Cystoid degeneration, multifocal, mild Hepatocyte alteration, vacuolated, focal, mild Megalocytosis, mild
Lung	-Pneumonia, interstitial, chronic, local areas, mild Alveolar macrophages, multifocal, mild Perivascular mononuclear infiltrate, mild
Ovary	-Tubular hyperplasia, bilateral, mild
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4804 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Soft Tissues (leg)	-Left hind foot swollen.
Pituitary	-Hemorrhagic mass, 0.8 cm dia.
Liver	-Multiple pale foci in all lobes; large pale mass, 4 x 3 x 2 cm, in left lateral lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked

Animal Number: 1R-4804 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Bone	-Arthritis, synovitis; joints, hindleg, unilateral, moderate
Kidney	-Chronic progressive nephropathy, minimal Pelvic mineralization, mild Pigment, conv. tub. epithelium, brown, mild
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Megalocytosis, mild Hepatocellular carcinoma Hematopoiesis, extramedullary, mild
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild Hemorrhage, local areas, moderate
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Ovary, Mammary Gland, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4805 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 87) Found Dead

Macroscopic Observations:

Pituitary	-Hemorrhagic mass, 1.2 x 0.7 cm.
Liver	-Pale

Microscopic Observations:

Eye	-Not examined, missing
Kidney	-Pelvic mineralization, minimal Vacuolation, conv. tub. epitheium, moderate
Liver	-Hepatocyte vacuolation, periportal, moderate Megalocytosis, mild
Lung	-Vascular mineralization, mild Alveolar macrophages, moderate Hemorrhage, local areas, mild
Lymph Node (mesenteric)	-Not examined, missing
Ovary	-Tubular hyperplasia, bilateral, mild
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-4805 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 87) Found Dead

Microscopic Observations (continued):

Pituitary	-Adenoma
Small Intestine	-Within normal limits Fewer than protocol number
Spleen	-Hemosiderosis, marked
Urinary Bladder	-Not examined, missing
Uterus	-Exudate, lumenal, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Stomach, Large Intestine, Aorta, Mammary Gland, Trachea, Adrenal, Thyroid, Esophagus, Pancreas, Salivary Gland, Heart.

Animal Number: 1R-4807 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 79) Sacrificed in extremis

Macroscopic Observations:

Skin	-Ulcerated necrotic mass, 5 x 3.5 x 2 cm, right axilla.
Liver	-Small pale lesion, 0.4 cm dia., right anterior lobe.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Esophagus	-Not examined, missing
Kidney	-Pelvic mineralization, minimal
Liver	-Megalocytosis, mild Hyperplastic nodule
Lung	-Vascular mineralization, mild Pneumonia, interstitial, chronic, multifocal, mild Alveolar macrophages, multifocal, mild
Mammary Gland	-Adenocarcinoma, ductal
Parathyroid	-Not examined, missing
Spleen	-Hematopoiesis, extramedullary, increased, moderate
Thyroid	-Not examined, missing
Trachea	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Pituitary, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4808 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Pituitary	-Raised hemorrhagic mass, 1 cm dia.
Mammary Gland	-Nodular mass, 4 x 2 cm, left side.
Microscopic Observations:	
Aorta	-Not examined, missing
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, marked
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, moderate Hepatocyte alteration, vacuolated, focal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild Hemorrhage, local areas, moderate
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Lobular hyperplasia
Ovary	-Tubular hyperplasia, bilateral, mild
Pituitary	-Adenoma
Urinary Bladder	-Epithelial hyperplasia, simple, focal, mild
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Trachea, Adrenal, Thyroid, Parathyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4809 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Liver	-Several pale lesions in all lobes.
Mammary Gland	-Nodular mass, 5.5 x 5 x 2 cm, throat area; nodular mass, 6.5 x 5.5 x 2.5 cm, left inguinal area.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, marked
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Megalocytosis, moderate Hepatocellular adenoma Hyperplastic nodule, multiple Vacuolation of hepatocytes in some nodules.

Animal Number: 1R-4809 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Lung	-Alveolar macrophages, multifocal, mild
	Perivascular mononuclear infiltrate, mild
Mammary Gland	-Fibroadenoma
	Large areas of necrosis in tumor.
Ovary	-Tubular hyperplasia, bilateral, mild
Pituitary	-Adenoma
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Thyroid, Parathyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4810 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Raised dark mass, 0.8 cm dia.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, moderate
Kidney	-Chronic progressive nephropathy, minimal
	Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, minimal
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, marked
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Hemorrhage, local areas, mild
Lymph Node (mesenteric)	-Not examined, missing
Parathyroid	-Sinusoidal ectasia, moderate
Pituitary	-Adenoma

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4811 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Eye	-Opacity, left eye.
Liver	-Pale and mottled.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
	Medullary cell hyperplasia, unilateral, mild
	Pheochromocytoma, benign, unilateral
Esophagus	-Not examined, missing
Eye	-Retinal atrophy, unilateral, moderate
	Cataract, unilateral
Kidney	-Chronic progressive nephropathy, mild
	Pelvic mineralization, moderate
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Hepatocyte vacuolation, periportal, moderate
	Megalocytosis, moderate
	Pigment, brown, hepatocytes, mild
Lung	-Vascular mineralization, mild
Ovary	-Tubular adenoma, unilateral
Spleen	-Hemosiderosis, mild
Uterus	-Cystic glands, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Pituitary, Trachea, Thyroid, Parathyroid, Pancreas, Salivary Gland, Lymph Node (mesenteric).

Animal Number: 1R-4812 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:	
Skin	-Hair loss, head to neck.
Pituitary	-Raised hemorrhagic mass, 1 cm dia.
Microscopic Observations:	
Adrenal	-Sinusoidal ectasia, cortex, mild
Kidney	-Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, moderate
Lung	-Vascular mineralization, mild
	Alveolar macrophages, local areas, mild
Ovary	-Tubular hyperplasia, unilateral, mild
Parathyroid	-Not examined, not in plane of section

Animal Number: 1R-4812 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Pituitary	-Adenoma
Spleen	-Hemosiderosis, moderate
Uterus	-Cystic glands, minimal

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye, Skin.

Animal Number: 1R-4813 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Liver	-Pale and mottled.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, mild
Eye	-Retinal atrophy, marked
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, multifocal, mild Hepatocyte alteration, vacuolated, multifocal, mild Megalocytosis, mild
Lung	-Vascular mineralization, mild
Ovary	-Tubular adenoma, unilateral
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Kidney, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Mammary Gland, Trachea, Thyroid, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland.

Animal Number: 1R-4814 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

	-No visible lesions.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, mild

Animal Number: 1R-4814 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Kidney	-Chronic progressive nephropathy, mild
	Pelvic mineralization, mild
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, minimal
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, mild
Lung	-Vascular mineralization, mild
	Pneumonia, interstitial, chronic, multifocal, mild
	Alveolar macrophages, local areas, moderate
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Salivary Gland	-Not examined, missing
Spleen	-Hemosiderosis, mild
Thyroid	-Not examined, not in plane of section

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Uterus, Ovary, Mammary Gland, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Eye.

Animal Number: 1R-4815 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Adrenal	-Left adrenal enlarged.
Uterus	-Cystic lesion, 1.5 cm dia., left horn.

Microscopic Observations:

Adrenal	-Sinusoidal ectasia, cortex, unilateral, marked
	Cortical atrophy, unilateral, moderate
Heart	-Myocarditis, chronic nonsuppurative, multifocal, minimal
Kidney	-Chronic progressive nephropathy, moderate
	Pelvic mineralization, mild
	Polyarteritis, cortical, moderate
Liver	-Portal mononuclear cell infiltrate, minimal
	Hepatocyte vacuolation, multifocal, mild
	Megalocytosis, minimal
Lung	-Vascular mineralization, mild
	Alveolar macrophages, multifocal, mild
	Perivascular mononuclear infiltrate, mild

Animal Number: 1R-4815 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Lymph Node (mesenteric)	-Polyarteritis, mild
Ovary	-Tubular hyperplasia, bilateral, moderate
Pancreas	-Acinar atrophy, mild
Pituitary	-Pigment, brown, pars distalis, moderate
Uterus	-Polyp

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Thyroid, Parathyroid, Esophagus, Salivary Gland, Eye.

Animal Number: 1R-4817 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Skin	-Raised ulcerated lesion, left rear footpad.
Pituitary	-Raised mass, 0.7 cm dia.
Liver	-Pale raised circular mass, 2 cm dia., median lobe.

Microscopic Observations:

Adrenal	-Cortical vacuolation, local areas, mild Pigment, brown, cortical, mild
Heart	-Myocarditis, chronic nonsuppurative, multifocal, minimal
Kidney	-Chronic progressive nephropathy, mild Pelvic mineralization, moderate
Liver	-Portal mononuclear cell infiltrate, mild Portal bile duct proliferation, mild Hepatocyte vacuolation, diffuse, marked Cystoid degeneration, focal, mild Hepatocellular carcinoma
Lung	-Vascular mineralization, mild Perivascular mononuclear infiltrate, mild
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Galactocele
Ovary	-Cyst, bilateral
Parathyroid	-Adenoma
Pituitary	-Adenoma
Skin	-Pododermatitis, ulcerative, hindleg, marked

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine,

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Animal Number: 1R-4817 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):
The following tissues were found to be within normal limits (continued):
Urinary Bladder, Aorta, Uterus, Trachea, Thyroid, Esophagus, Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4818 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 104) Sacrificed in extremis

Macroscopic Observations:

Pituitary	-Raised mass, 0.8 cm dia.
Adrenal	-Right adrenal appears enlarged.
Kidney	-Pale, pitted and enlarged.

Microscopic Observations:

Adrenal	-Cortical vacuolation, moderate
	Sinusoidal ectasia, cortex, moderate
	Cortical atrophy, unilateral, moderate
Kidney	-Chronic progressive nephropathy, marked
	Pelvic mineralization, minimal
Liver	-Hepatocyte vacuolation, diffuse, minimal
Lung	-Vascular mineralization, mild
	Alveolar macrophages, focal, minimal
	Perivascular mononuclear infiltrate, minimal
Ovary	-Tubular hyperplasia, bilateral, mild
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Spleen	-Hemosiderosis, mild
Stomach	-Gastritis, acute, moderate
Thyroid	-Hyperplasia, C cell, local areas, moderate
	C cell carcinoma
Uterus	-Cystic glands, moderate

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Heart, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Mammary Gland, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4819 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Macroscopic Observations:

Pituitary	-Dark lesion, 0.3 cm dia.
Mammary Gland	-Lobular mass, 3 x 1.5 x 1 cm, left inguinal area.
Liver	-Pale circular lesion, 1.4 cm dia., median lobe.

Animal Number: 1R-4819 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 105) Terminal Sacrifice

Microscopic Observations (continued):

Adrenal	-Cortical vacuolation, local areas, mild
	Sinusoidal ectasia, cortex, mild
Heart	-Myocardial fibrosis, local areas, moderate
Kidney	-Pelvic mineralization, minimal
Liver	-Portal mononuclear cell infiltrate, mild
	Portal bile duct proliferation, mild
	Megalocytosis, moderate
	Hyperplastic nodule
Lung	-Perivascular mononuclear infiltrate, mild
Mammary Gland	-Adenocarcinoma
Ovary	-Tubular adenoma, bilateral
Parathyroid	-Not examined, not in plane of section
Pituitary	-Adenoma
Thyroid	-C cell carcinoma
Uterus	-Cystic glands

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Spleen, Stomach, Small Intestine, Large Intestine, Urinary Bladder, Aorta, Trachea, Esophagus, Lymph Node (mesenteric), Pancreas, Salivary Gland, Eye.

Animal Number: 1R-4820 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 80) Found Dead

Macroscopic Observations:

Skin	-Large ulcerated mass, 8 x 4.5 x 5 cm, surrounding left hind leg.
Liver	-Mottled, enlarged
Stomach	-Full of blackish, yellowish fluid.

Microscopic Observations:

Adrenal	-Malignant lymphoma, histiocytic
Aorta	-Not examined, missing
Eye	-Not examined, missing
Heart	-Malignant lymphoma, histiocytic
Kidney	-Pelvic mineralization, mild
	Malignant lymphoma, histiocytic
	Protein resorption droplets, moderate
Large Intestine	-Not examined, missing
Liver	-Malignant lymphoma, histiocytic
	Extensive nodular and diffuse proliferation with vascular involvement.

Table: 2

Animal Number: 1R-4820 Sex: Female Group: (2) FM-3924 100 ppm
Fate: (Week= 80) Found Dead

Microscopic Observations (continued):

Lung	-Vascular mineralization, mild Malignant lymphoma, histiocytic
Lymph Node (mesenteric)	-Not examined, missing
Mammary Gland	-Not examined, missing
Pancreas	-Not examined, missing
Small Intestine	-Not examined, missing
Soft Tissues (leg)	-Malignant lymphoma, histiocytic Mass involving hindleg was malignant lymphoma; necrotic and ulcerated.
Spleen	-Hemosiderosis, moderate
Stomach	-Necrosis, mucosal, local areas, moderate
Urinary Bladder	-Not examined, missing

The following tissues were found to be within normal limits:
Brain, Spinal Cord, Bone Marrow, Uterus, Ovary, Pituitary, Trachea, Thyroid, Parathyroid, Esophagus, Salivary Gland.

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