NATIONAL TOXICOLOGY PROGRAM
Technical Report Series
No. 226

CARCINOGENESIS BIOASSAY OF C. I. SOLVENT YELLOW 14

(CAS NO. 842-07-9)

IN F344/N RATS AND B6C3F$_1$ MICE

(FEED STUDY)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

NATIONAL TOXICOLOGY PROGRAM

The National Toxicology Program (NTP), established in 1978, develops and evaluates scientific information about potentially toxic and hazardous chemicals. This knowledge can be used for protecting the health of the American people and for the primary prevention of chemically induced disease. By bringing together the relevant programs, staff, and resources from the U.S. Public Health Service, DHHS, the National Toxicology Program has centralized and strengthened activities relating to toxicology research, testing and test development/validation efforts, and the dissemination of toxicological information to the public and scientific communities and to the research and regulatory agencies.

The NTP is comprised of four charter DHHS agencies: the National Cancer Institute, National Institutes of Health; the National Institute of Environmental Health Sciences, National Institutes of Health; the National Center for Toxicological Research, Food and Drug Administration; and the National Institute for Occupational Safety and Health, Centers for Disease Control. In July 1981, the Carcinogenesis Bioassay Testing Program, NCI, was transferred to the NIEHS.

NTP Technical Report

on the

CARCINOGENESIS BIOASSAY

of

C. I. SOLVENT YELLOW 14

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(FEED STUDY)

NATIONAL TOXICOLOGY PROGRAM
Research Triangle Park
Box 12233
North Carolina 27709
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Bethesda, Maryland 20205

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NOTE TO THE READER

This is one in a series of experiments designed to determine whether selected chemicals produce cancer in animals. Chemicals selected for testing in the NTP carcinogenesis bioassay program are chosen primarily on the bases of human exposure, level of production, and chemical structure. Selection per se is not an indicator of a chemical's carcinogenic potential. Negative results, in which the test animals do not have a greater incidence of cancer than control animals, do not necessarily mean that a test chemical is not a carcinogen, inasmuch as the experiments are conducted under a limited set of conditions. Positive results demonstrate that a test chemical is carcinogenic for animals under the conditions of the test and indicate that exposure to the chemical is a potential hazard to humans. The determination of the risk to humans from chemicals found to be carcinogenic in animals requires a wider analysis which extends beyond the purview of this study.

This study was initiated by the National Cancer Institute's Carcinogenesis Testing Program, now part of the National Institute of Environmental Health Sciences, National Toxicology Program.

Comments and questions about the National Toxicology Program Technical Reports on Carcinogenesis Bioassays should be directed to the National Toxicology Program, located at Room A-306, Landow Building, Bethesda, MD 20205 (301-496-1152) or at Research Triangle Park, NC 27709 (919-541-3991).

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Single copies of this carcinogenesis bioassay technical report are available without charge (and while supplies last) from the NTP Public Information Office, National Toxicology Program, P.O. Box 12233, Research Triangle Park, NC 27709.

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ABSTRACT

A carcinogenesis bioassay of C. I. Solvent Yellow 14 (94.1% pure), a widely used monoazo dye, was conducted by feeding diets containing 250 or 500 ppm of C.I. Solvent Yellow 14 to groups of 50 F344 rats of either sex for 103 weeks. Similar groups of 50 B6C3F1 mice received diets containing 500 or 1,000 ppm of C. I. Solvent Yellow 14 for 103 weeks. Groups of 50 untreated rats and mice of either sex served as controls.

Throughout the bioassay, mean body weights of dosed rats and mice were slightly lower than those of controls. No compound-related clinical signs or effects on survival were observed.

Increases in nonneoplastic lesions included cardiac valve fibrosis for male and female rats, lymphoid hyperplasia of the lung for male rats, and for female rats, bile duct hyperplasia, focal atrophy of the pancreatic acinus, and nephropathy. None of these effects were observed in mice.

Neoplastic nodules of the liver occurred in rats of either sex with a dose-related trend that was significant (male, $P<0.001$; female, $P=0.005$), and the incidences in the high-dose groups were significantly higher than those in the controls (male: control, 5/50; low-dose, 10/50; high-dose, 30/50, $P<0.001$ and female: control, 2/50; low-dose, 3/49; high-dose, 10/48, $P=0.011$).

Lymphomas or leukemias occurred in low-dose female mice at an incidence significantly ($P<0.05$) higher than that in the controls (12/50, 23/50, 17/50). Because of the lack of a dose-related trend and because the incidence in the high-dose group was not significant, the association between the increased incidence of hematopoietic tumors in the low-dose group and the administration of C. I. Solvent Yellow 14 is not clearly established. The incidence of lymphomas or leukemias in male mice was higher (not statistically significant) than that in the corresponding controls (5/49, 10/50, 10/50); in both low- and high-dose rats of either sex the incidence was significantly ($P<0.001$) lower than that in controls.

Under the conditions of this bioassay, C. I. Solvent Yellow 14 was carcinogenic in male and female F344/N rats, as evidenced by increased incidences of neoplastic nodules of the liver. C. I. Solvent Yellow 14 was not carcinogenic for B6C3F1 mice of either sex.

CONTRIBUTORS

This bioassay was conducted at Battelle Columbus Laboratories, Columbus, Ohio, under a subcontract to Tracor Jitco, Inc., Rockville, Maryland, prime contractor for the NCI Bioassay Program. The prechronic studies were started on June 24, 1976, and finished on December 12, 1976; the chronic studies were begun in March 1977, and completed in April 1979.

Dr. A. Peters (1) was the principal investigator for this study. Ms. T. Voss (1) was the Bioassay Coordinator). Doses of the test chemical were selected by Drs. A. Peters and J. Robens (2,3). Drs. A. Peters, H. Harroff (1), and P. Stromberg (1) were in charge of animal care. Necropsies were directed by Drs. G. S. Dill (1), R. Persing (1), R. Everett (1,4), and D. Thake (1). Histopathologic evaluations were performed by Drs. G. S. Dill (mice) and R. Persing (rats). The pathology report and selected slides were evaluated in August 1980 by the NCI Pathology Working Group as described by Ward et al. (1978). The NCI Pathology Working Group was composed of Drs. G. Reznik (5), S. Stinson (5), and M. Stedham (2). The diagnoses represent a consensus of contracting pathologists and the NCI Pathology Working Group, with final approval by the NCI Pathology Working Group.

Animal pathology tables and survival tables were compiled at EG&G Mason Research Institute (6). Statistical analyses were performed by Dr. J. R. Joiner (2) and Mr. J. Warner (2) using methods selected for the bioassay program by Dr. J. J. Gart (7). Chemical analyses were conducted at Midwest Research Institute (8). Dosage analysis was supervised by Drs. R. Freudenthal (1) and P. Leber (1,9) and by Mr. D. Emmerling (1).

This report was prepared at Tracor Jitco (2) under the direction of Dr. C. Cueto, Director of the Bioassay Program; Dr. C. R. Angel, Associate Director; Dr. J. E. Tomaszewski, chemist; Dr. R. M. Kovatch, pathologist; Dr. W. D. Theriault, reports manager; and Dr. A. C. Jacobs, bioscience writer.

The following scientists at NCI/NTP (5) were responsible for evaluating the bioassay experiment, interpreting the results, and reporting the findings: Dr. Michael P. Dieter, Dr. J. Fielding Douglas, Dr. Charles Grieshaber, Dr. William V. Hartwell, Dr. Joseph Haseman, Dr. James Huff, Dr. Richard Irwin (Chemical Manager), Dr. Ernest E. McConnell, Dr. John A. Moore, Dr. Sherman F. Stinson, and Dr. Jerrold M. Ward.

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PEER REVIEW PANEL AND COMMENTS

On February 18, 1981, this carcinogenesis bioassay report on C. I. Solvent Yellow 14 underwent peer review by the National Toxicology Program Board of Scientific Counselors' Technical Reports Review Subcommittee and associated Panel of Experts at public meeting held in Building 31C, National Institutes of Health, Bethesda, Maryland.

Dr. Highland, a principal reviewer for the report on the bioassay of C. I. Solvent Yellow 14, agreed with the conclusion in the report that there was a clear association between ingestion of the chemical and a significantly increased incidence of neoplastic nodules of the liver in F344 rats of both sexes. However, he felt the conclusion was weak and not reflective of the discussion section; he stated that the nodules are true neoplasms, and hence, are indicative of potential carcinogenic risk to humans. He mentioned that the dose levels in rats were less than maximum tolerated doses (MTDs), but were based on an indication of possible toxicity to the kidneys at higher doses in the subchronic studies.

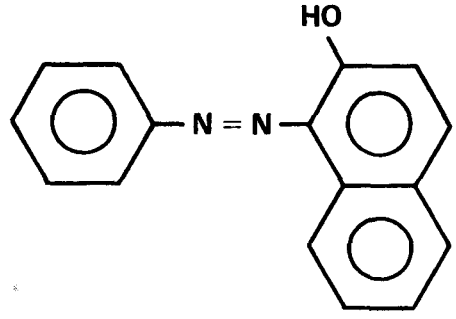
As a second principal reviewer, Dr. Murphy agreed with the conclusions in the report; because there was no evidence of carcinogenicity in mice and because of the difficulty in classifying nodules as neoplasms, he said there was "limited evidence" for carcinogenicity. He agreed that an MTD had not been achieved in the studies on rats. He stated that certain neoplastic and nonneoplastic pathologic effects observed should be cited: for instance, in the chronic studies, a significantly lower incidence of lymphomas and leukemias in male and female rats; dose-related increases in incidence of cardiac valve fibrosis in rats and in bile duct hyperplasia, focal atrophy of the pancreas, and nephropathy in female rats; and in the subchronic studies, hepatic degeneration and renal cortical pigment deposition in rats, and hemosiderosis in the liver, spleen, and kidneys of mice. Dr. Murphy praised the discussion section but said that the suggested correlation of lipid solubility of the monoazo dyes with carcinogenicity was purely speculative.

Dr. Williams said that even though such discussion may be speculative, it should be expanded, since with the monoazo dyes, the proposed correlation may be a reasonable hypothesis for why some of the dyes are carcinogenic and others are not. He also stated that this chemical is negative in Salmonella assays because the bacteria have an azo reductase which cleaves the azo bond. Dr. Murphy agreed that the paragraph should be retained and expanded to clarify the possible correlations between lipid solubility, metabolism, and toxicity.

Dr. Moore stated and Dr. Highland agreed that the conclusion and summary statement should be strengthened to say "that this compound was found to be a carcinogen as evidenced by an increased incidence of hepatic neoplastic nodules in rats of both sexes."

Dr. Highland moved that the report on the bioassay of C. I. Solvent Yellow 14 be accepted with more emphasis being given to the nonneoplastic effects in the summary, expansion of the discussion of azo dye solubility-toxicity correlation, and of the positive carcinogenic response in rats. Dr. Murphy seconded the motion and the report was approved unanimously by the Peer Review Panel.

I. INTRODUCTION



C.I. SOLVENT YELLOW 14

CAS NO. 842-07-9 **COLOUR INDEX NO. 12055**

C. I. Solvent Yellow 14 -- 1-(phenylazo)-2-naphthol — is a water-insoluble monoazo dye used to color hydrocarbon solvents, oils, fats, waxes, shoe and floor polishes, cellulose ester varnishes, styrene resins, gasoline, and soap (Society of Dyers and Colourists, 1971). In the 1940's, C. I. Solvent Yellow 14 was used as a colorant for margarine (Childs and Clayson, 1966; and Kirby and Peacock, 1949), but at present it is not used in food, drugs, or cosmetics (IARC, 1975). In 1978, 381,000 pounds were produced in the United States (USITC, 1979).

Several studies indicated that C. I. Solvent Yellow 14 is carcinogenic for mice (Kirby and Peacock, 1949; Bonser et al., 1956; Bonser et al., 1963; Clayson and Bonser, 1965; Clayson et al., 1968; and Jull, 1979).

Hepatomas were observed in 6/12 male mice 14 months after they were given 17 to 20 subcutaneous injections of 0.25 ml of a 3% solution of C. I. Solvent Yellow 14 in arachis oil at 3-week intervals. Hepatomas were reported by the authors to be very rare among the same (unspecified) strain of mouse (Kirby and Peacock, 1949). This study was not considered adequate because no vehicle controls were used.

Implantation of paraffin wax pellets containing C. I. Solvent Yellow 14 into the bladders of albino, (C57 X IF)F_1, and (C57Bl/6J X A/J) mice resulted in increased bladder tumors, compared with controls (Bonser et al., 1956; Bonser et al., 1963; Clayson and Bonser, 1965; Clayson et al., 1968;

and Jull, 1979). However, implantation of the wax pellet alone is associated with an increased incidence of bladder tumors (Clayson et al., 1968), and the pellet may stimulate the proliferation of epithelial cells of the bladder in mice (Jull, 1979).

No compound-related effects were observed when CBA mice, mice of unspecified strain, and rats were fed diets containing 1,000 ppm C. I. Solvent Yellow 14 for 1 to 2 years (Clayson et al., 1965; and Hackmann, 1951). These studies are not considered to be adequate because small numbers of animals were used and the dosage may not have been at the maximum tolerated level.

C. I. Solvent Yellow 14 was not mutagenic for Salmonella typhimurium TA 98, TA 100, TA 1535, TA 1537, or TA 1538, with or without prior metabolic activation (Garner and Nutman, 1977; Busk and Albanus, 1978; and Brown et al., 1978).

Three metabolites (1-amino-2-naphthyl hydrogen sulfate, 1-amino-2-naphthyl glucuronide, and the glucuronide of 1-phenylhydrazo-2-naphthol) have been identified in the urine of albino rats of either sex given C. I. Solvent Yellow 14 by gavage (Childs et al., 1967).

C. I. Solvent Yellow 14 was one of several azo dyes (C.I. Disperse Yellow No. 3, D & C Red No. 9, C.I. Acid Red 14, C.I. Acid Orange 10, and FD & C Yellow No. 6) assigned for testing by the Bioassay Program as part of a class study, because humans are exposed to these dyes and because previous tests described above were considered to be inadequate.

II. MATERIALS AND METHODS

A. Chemical

Technical grade C. I. Solvent Yellow 14 (CAS No. 842-07-9) was obtained from Pylam Products Company (Queen's Village, NY). Lot No. PY 112075 was used for all subchronic and chronic studies.

Purity and identity analyses were performed at Midwest Research Institute (Kansas City, MO) (Appendix E). Results of titration of the azo function with titanous chloride indicated that the test material was 94.1% 1-(phenylazo)-2-naphthol. According to the manufacturer, the remaining 6% of the test material was comprised of various chemical intermediates used in the manufacturing process; no inorganic salts were present. The results of the elemental analysis for carbon were approximately 1% less than the theoretical value and those for nitrogen and hydrogen agreed with the theoretical values. Four trace impurities were detected by thin-layer chromatography. Two minor impurities with areas 0.2% and 0.5% of the the major peak were detected by high-pressure liquid chromatography. The infrared and ultraviolet/visible spectra matched the published spectra for this azo dye. The nuclear magnetic resonance spectrum was qualitatively consistent with the structure, although integration of the proton peri to the azo group was lower than expected.

All lots of technical grade C. I. Solvent Yellow 14 must meet a defined color standard. Since the manufacturer stated that the lot used in the present study was representative of the C. I. Solvent Yellow 14 used for industrial purposes, it was deemed suitable for the present bioassay.

The chemical was periodically analyzed at Battelle Columbus Laboratories using high-pressure liquid chromatography (Appendix E) and infrared spectroscopy. Results from these analyses indicated no change in composition throughout the study.

B. Dietary Preparation

Diets were formulated by mixing weighed amounts of Purina® Laboratory Chow animal meal (Table 1) and the test chemical for 15 minutes in a Patterson-Kelly® twin-shell blender equipped with an intensifier bar. Formulated diets were stored at 23°C for no longer than 10 days.

Diets containing 100,000 ppm C. I. Solvent Yellow 14 were analyzed at Midwest Research Institute and were found to be stable for 2 weeks at temperatures up to 45°C (Appendix F). The analytical concentrations of C. I. Solvent Yellow 14 in randomly selected batches of formulated diets containing target levels of 250, 500, or 1,000 ppm were within ±10% of the desired concentrations (Appendix G).

C. Animals

Four-week-old F344 rats and B6C3F1 mice of either sex were obtained from NCI Frederick Cancer Research Center (Frederick, MD), maintained in separate quarters for approximately 2 weeks, and randomly assigned to cages according to a table of random numbers. The cages were then randomly assigned to control or dosed groups.

D. Animal Maintenance

Rats and mice were housed by species, five per cage, in solid-bottom polycarbonate cages (Table 1) supplied with hardwood chip bedding. Cages and bedding were changed twice per week. Control and test diets were available ad libitum in feed hoppers that were changed weekly. Tap water, supplied and analyzed by the Columbus, Ohio, water department, was available ad libitum via an automatic watering system.

Temperature in the animal rooms was 21° to 23°C and the relative humidity was 40%-60%. Room air was changed 15 times per hour. Standard white fluorescent lighting provided illumination 12 hours per day.

Table 1. Specifications and Sources of Materials Used for Animal Maintenance

Item	Description	Source
Bedding	Absorb-dri® hardwood chips	Lab Products, Inc. (Garfield, NJ)
Cages	Solid bottom, polycarbonate	Lab Products, Inc. (Garfield, NJ)
Feed	Purina® Laboratory Chow	Ralston Purina Co. (Richmond, IN)
Watering System	Edstrom Automatic	Edstrom Industries (Waterford, WI)
Rack Filters	Dupon 2024 Spun-Bonded polyester filters	Snow Filtration (Cincinnati, Ohio)

Rats and mice fed C. I. Solvent Yellow 14 were housed by species in separate rooms, but they shared rooms with animals of the same species on feeding studies of D and C Red No. 9 (CAS 5160-02-1) and C. I. Disperse Yellow 3 (CAS 2832-40-8).

E. Single-Day Dosing and Fourteen-Day Repeated Dose Studies

Single-day dosing and 14-day repeated dose studies were conducted using F344 rats and B6C3F1 mice to determine the toxicity of C. I. Solvent Yellow 14 and the concentrations to be used in the 13-week subchronic studies. In the single-day dosing study, groups of five males and five females of each species were fed diets containing 6,000, 12,500, 25,000, 50,000, or 100,000 ppm C. I. Solvent Yellow 14 for 24 hours and then laboratory chow for the remainder of the study. Feed consumption and weight gain were not determined. All animals were killed on day 15. No deaths occurred among the rats or mice and no signs of toxicity were observed.

Groups of five males and five females of each species were fed diets containing 6,000, 12,500, 25,000, 50,000, or 100,000 ppm C. I. Solvent Yellow 14 for 2 weeks. Surviving animals were killed with carbon dioxide on day 15 (Table 2).

One of five male rats and 1/5 female rats receiving 6,000 ppm and all rats and mice receiving more than 6,000 ppm died. All mice receiving 6,000 ppm survived. Dark red intestines and mildly congested livers were found at necropsy in rats and mice at all doses, but these effects were more severe at higher doses. Histopathologic examinations were not conducted. Doses selected for the subchronic studies were less than those at which deaths occurred in the 14-day study.

Table 2. Dosage and Survival of Rats and Mice Fed Diets Containing C. I. Solvent Yellow 14 for 2 Weeks

Dose (ppm)	Survival(a)	
	Male	Female
Rats		
6,000	4/5	4/5
12,500	0/5	0/5
25,000	0/5	0/5
50,000	0/5	0/5
100,000	0/5	0/5
Mice		
6,000	5/5	5/5
12,500	0/5	0/5
25,000	0/5	0/5
50,000	0/5	0/5
100,000	0/5	0/5

(a) Number surviving/number per group.

F. Subchronic Studies

Subchronic studies were conducted to determine the concentrations to be used in the chronic studies. Diets containing 0, 250, 500, 1,000, 2,000, or 4,000 ppm C. I. Solvent Yellow 14 were fed for 13 weeks to groups of 10 male and 10 female rats (Table 3), an groups of 10 male and 10 female mice received diets with 0, 500, 1,000, 2,000, 4,000, or 8,000 ppm (Table 4).

Mortality checks were made twice daily and individual animals were weighed weekly. At the end of the 91-day study, survivors were killed with carbon dioxide, necropsies were performed on all animals, and tissues (see section H) were taken for histopathologic analysis from control animals and from animals of the highest dose group in which at least 60% survived. The liver, spleen, kidneys, testicles, thymus, prostate, and seminal vesicles were examined in rats administered 250 or 500 ppm and the liver, spleen, kidneys, and thymus were examined in mice in the 250- and 500-ppm groups.

Rats: None of the rats died. Mean body weights of animals receiving 1,000 ppm or more were depressed by more than 10% when compared with the controls. Feed consumption by rats fed 2,000 or 4,000 ppm was 80% and 60%, respectively, that of the controls.

Hepatic degeneration was observed in all rats receiving 4,000 ppm. The hepatocellular degeneration was characterized by increased basophilia and a granular appearance of hepatocytes adjacent to the portal areas, while centrilobular hepatocytes had a hazy, almost vacuolated appearance. Pigment deposition in the tubular epithelium of the kidney cortex was observed in all females receiving 500 ppm or more and in all males receiving 1,000 ppm or more. The pigment was granular, golden brown, iron negative material and was not further characterized. In males, the pigment was associated with nephrosis.

Because of the kidney effects, doses selected for rats in the chronic study were 250 and 500 ppm.

Table 3. Dosage, Survival, and Mean Body Weights of Rats Fed Diets Containing C. I. Solvent Yellow 14 for 91 Days

Dose (ppm)	Survival (a)	Mean Body Weights (grams)(c) Initial(SE)(b)	Final(SE)	Change(SE)	Weight Change Relative to Controls (d) (%)
MALE					
0	10/10	115.3 (3.5)	302.6 (6.9)	+187.3 (5.0)	
250	10/10	117.7 (2.4)	299.9 (4.0)	+182.2 (3.0)	-2.7
500	10/10	111.6 (4.3)	297.1 (6.1)	+185.5 (4.5)	-1.0
1,000	10/10	120.9 (3.4)	278.1 (5.1)	+157.2 (4.3)	-16.1
2,000	10/10	122.9 (3.2)	230.6 (4.6)	+107.7 (3.3)	-42.5
4,000	10/10	108.1 (1.9)	120.1 (4.7)	+ 12.0 (4.8)	-93.6
FEMALE					
0	10/10	106.1 (2.7)	189.6 (3.0)	+83.5 (3.7)	
250	10/10	100.1 (2.2)	179.1 (2.7)	+79.0 (2.6)	-5.4
500	10/10	102.0 (2.7)	181.4 (3.3)	+79.4 (2.8)	-4.9
1,000	10/10	96.4 (4.6)	167.5 (4.2)	+71.1 (2.3)	-14.9
2,000	10/10	97.0 (2.0)	148.6 (2.8)	+51.6 (2.7)	-38.2
4,000	10/10	94.6 (2.4)	115.4 (3.4)	+20.8 (2.5)	-75.1

(a) Number surviving/number per group.
(b) Standard error.
(c) Weight stratification of animals for randomization into dosed groups was not part of the protocol.
(d) Weight Change Relative to Controls =

$$\frac{\text{Weight Change (Dosed Group)} - \text{Weight Change (Control Group)}}{\text{Weight Change (Control Group)}} \times 100$$

Table 4. Dosage, Survival, and Mean Body Weights of Mice Fed Diets Containing C. I. Solvent Yellow 14 for 91 Days

Dose (ppm)	Survival (a)	Mean Body Weights (grams)(c) Initial(SE)(b)	Final(SE)	Change(SE)	Weight Change Relative to Controls (d) (%)
MALE					
0	10/10	23.5 (0.43)	31.7 (0.56)	+8.2 (0.66)	
500	10/10	22.7 (0.45)	31.3 (0.70)	+8.6 (0.50)	+4.9
1,000	10/10	23.7 (0.60)	32.2 (0.82)	+8.5 (0.40)	+3.7
2,000	10/10	24.0 (0.49)	30.1 (0.67)	+6.1 (0.57)	-25.6
4,000	10/10	21.9 (0.31)	28.3 (0.56)	+6.4 (0.78)	-22.0
8,000	0/10	16.8 (0.47)	--	--	--
FEMALE					
0	10/10	18.7(e) (0.26)	23.6 (0.40)	+4.9 (0.23)	
500	10/10	18.7(e) (0.26)	24.1 (0.23)	+5.4 (0.22)	+10.2
1,000	10/10	18.3(e) (0.26)	23.6 (0.50)	+5.3 (0.50)	+8.2
2,000	10/10	18.6(e) (0.27)	24.6 (0.22)	+6.0 (0.39)	+22.4
4,000	10/10	18.3(e) (0.42)	24.0 (0.61)	+5.7 (0.47)	+16.3
8,000	5/10	15.0(e) (0.45)	24.6 (0.40)	+9.6 (0.37)	+95.9

(a) Number surviving/number per group.
(b) Standard error.
(c) Weight stratification of animals for randomization into dosed groups was not part of the protocol.
(d) Weight Change Relative to Controls =

$$\frac{\text{Weight Change (Dosed Group)} - \text{Weight Change (Control Group)}}{\text{Weight Change (Control Group)}} \times 100$$

(e) Weight at day 3.

Mice: Ten of ten male mice and 5/10 female mice receiving 8,000 ppm died. Mean body weight gain was depressed 22% or more in male mice receiving 2,000 ppm or more. Feed consumption data were not interpretable because of urine and fecal material in the feed containers and the scattering of feed by the animals.

Histopathologic examinations were not performed on tissues of mice fed 8,000 ppm because of the large number of deaths in these groups. Splenic, renal, and hepatic hemosiderosis and splenic congestion were found in all mice receiving 2,000 and 4,000 ppm. Splenic hemosiderosis was also found in all mice receiving 1,000 ppm.

Necrosis and regeneration of the renal cortical tubular epithelium were observed in 5/10 males receiving 4,000 ppm, and lymphoid depletion of the thymus was found in 3/9 males in the same dose group.

Due to the compound-related effects seen in the kidney, spleen, and liver, doses selected for mice for the chronic study were 500 and 1,000 ppm.

G. Chronic Studies

The test groups, concentrations of dye in the diet, and durations of the chronic studies are shown in Table 5. Dosed groups were given dosed feed for 103 consecutive weeks, followed by 1 or 2 weeks on basal feed before the terminal kill.

H. Clinical Examinations and Pathology

All animals were observed twice daily to discern morbidity or mortality. Clinical examinations and palpation for masses were performed each month, and the animals were weighed every 4 to 5 weeks. Moribund animals and animals that survived to the end of the bioassay were killed by suffocation in carbon dioxide and necropsied.

Table 5. Experimental Design of Chronic Feeding Studies with C. I. Solvent Yellow 14 in Rats and Mice

Test Group	Initial No. of Animals	C. I. Solvent Yellow 14 (ppm)	Weeks on Study	
			Dosed	Not Dosed
Male Rats				
Untreated-Control	50	0	0	104
Low-Dose	50	250	103	1
High-Dose	50	500	103	1
Female Rats				
Untreated-Control	50	0	0	104
Low-Dose	49	250	103	1
High-Dose	50	500	103	1
Male Mice				
Untreated-Control	50	0	0	105
Low-Dose	50	500	103	2
High-Dose	50	1,000	103	2
Female Mice				
Untreated-Control	50	0	0	105
Low-Dose	50	500	103	2
High-Dose	50	1,000	103	2

Gross and microscopic examinations were performed on major tissues, major organs, and all gross lesions from killed animals and from animals found dead, unless precluded in whole or in part by autolysis or cannibalization. Thus, the number of animals from which particular organs or tissues were examined microscopically varies and does not necessarily represent the number of animals that were placed on study in each group. The tissues were preserved in 10% neutral buffered formalin, embedded in paraffin, sectioned, and stained with hematoxylin and eosin. The following were examined microscopically: skin (abdominal), lungs and bronchi, trachea, bone, bone marrow (femur), thigh muscle, spleen, lymph nodes, thymus, heart, salivary glands, liver, pancreas, esophagus, stomach, duodenum, jejunum, ileum, cecum, colon, kidney, urinary bladder, pituitary, adrenal, thyroid, parathyroid, testis, prostate, mammary gland, uterus, ovary, brain, epididymus, and all tissue masses.

I. Data Recording and Statistical Analyses

Data on this experiment were recorded in the Carcinogenesis Bioassay Data System (Linhart et al., 1974). The data elements include descriptive information on the chemicals, animals, experimental design, clinical observations, survival, body weight, and individual pathologic results, as recommended by the International Union Against Cancer (Berenblum, 1969). Probabilities of survival were estimated by the product-limit procedure of Kaplan and Meier (1958) and are presented in this report in the form of graphs. Animals were statistically censored as of the time that they died of other than natural causes or were found to be missing; animals dying from natural causes were not statistically censored. Statistical analyses for a possible dose-related effect on survival used the method of Cox (1972) for testing two groups for equality and Tarone's (1975) extensions of Cox's method for testing for a dose-related trend. One-tailed P values have been reported for all tests except the departure from linearity test, which is reported only when its two-tailed P value is less than 0.05.

The incidence of neoplastic or nonneoplastic lesions has been given as the ratio of the number of animals bearing such lesions at a specific anatomic site (numerator) to the number of animals in which that site is examined (denominator). In most instances, the denominators included only those animals for which that site was examined histologically. However, when macroscopic examination was required to detect lesions (e.g., skin or mammary tumors) before histologic sampling or when lesions could have appeared at multiple sites (e.g., lymphomas), the denominators consist of the numbers of animals necropsied.

The purpose of the statistical analyses of tumor incidence is to determine whether animals receiving the test chemical developed a significantly higher proportion of tumors than did the control animals. As a part of these analyses, the one-tailed Fisher exact test (Cox, 1970) was used to compare the tumor incidence of a control group with that of a group of dosed animals at each dose level. When the results from two dosed groups are compared simultaneously with that for a control group, a correction to ensure an overall significance level of 0.05 may be made. The Bonferroni inequality criterion (Miller, 1966) requires that the P values for any comparison be less than or equal to 0.025. When this correction was used, it is discussed in the narrative section. It is not presented in the tables, where the Fisher exact P values are shown.

The Cochran-Armitage test for linear trend in proportions, with continuity correction (Armitage, 1971), was also used. Under the assumption of a linear trend, this test determines if the slope of the dose-response curve is different from zero at the one-tailed 0.05 level of significance. Unless otherwise noted, the direction of the significant trend is a positive dose relationship. This method also provides a two-tailed test of departure from linear trend.

When a time-adjusted analysis was used, deaths that occurred before the first tumor was observed were excluded by basing the statistical tests on animals that survived at least 52 weeks, unless a tumor was found at the anatomic site of interest before week 52. When such a tumor was found,

comparisons were based exclusively on animals that survived at least as long as the animals in which the first tumor were found. Once this reduced set of data was obtained, the standard procedures for analyses of the incidence of tumors (Fisher exact tests, Cochran-Armitage tests, etc.) were followed.

Life table methods were used to analyze the incidence of tumors. Curves of the proportions surviving without an observed tumor were computed as in Saffiotti et al. (1972). The week during which an animal died naturally or was killed was entered as the time point of examination for tumors. The methods of Cox and of Tarone were used for the statistical tests of the groups.

The approximate 95 percent confidence interval for the relative risk of each dosed group compared with its control was calculated from the exact interval on the odds ratio (Gart, 1971). The lower and upper limits of the confidence interval of the relative risk have been included in the tables of statistical analyses. The interpretation of the limits is that, in approximately 95% of a large number of identical experiments, the true ratio of the risk in a dosed group of animals to that in a control group would be within the interval calculated from the experiment. When the lower limit of the confidence interval is greater than one, it can be inferred that a statistically significant result has occurred (P less than 0.025 one-tailed test when the control incidence is not zero, P less than 0.050 when the control incidence is zero). When the lower limit is less than unity but the upper limit is greater than unity, the lower limit indicates the absence of a significant result while the upper limit indicates that there is a theoretical possibility of the induction of tumors by the test chemical, which could not be detected under the conditions of this test.

III. RESULTS - RATS

A. Body Weights and Clinical Signs (Rats)

Mean body weights of dosed rats of either sex were lower than those of the controls after week 16 for males and after week 50 for females (Figure 1 and Table 6). No compound-related clinical signs or effects on feed consumption were observed (Appendix H).

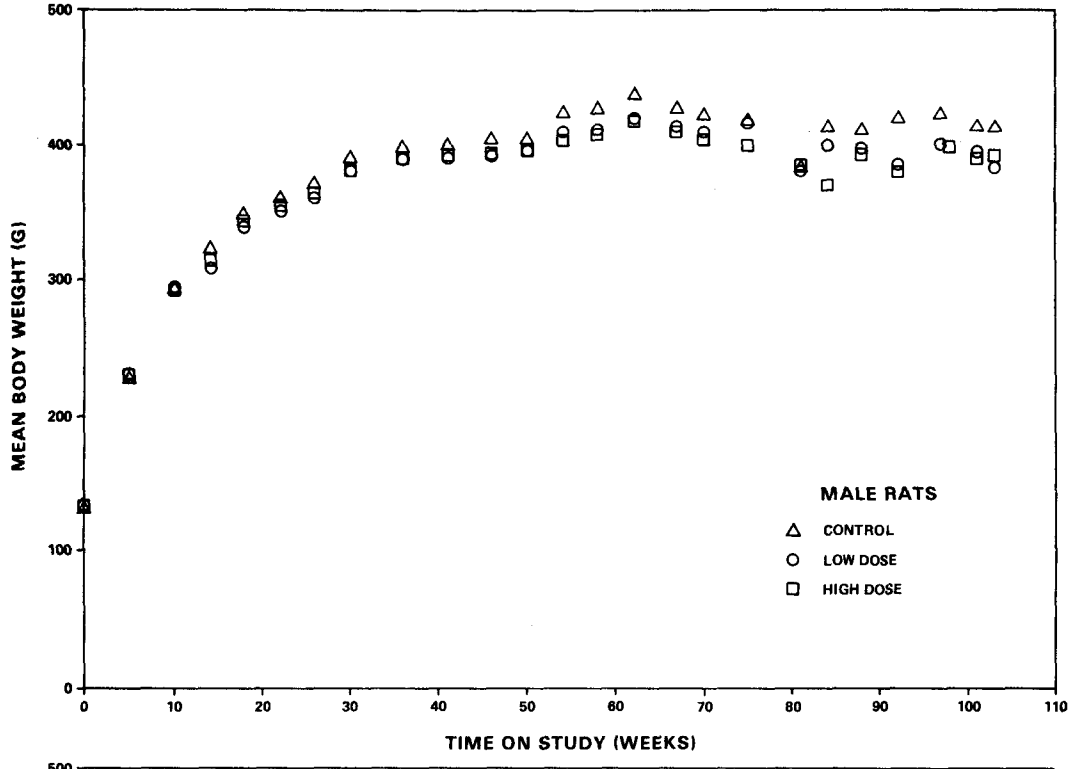
B. Survival (Rats)

Estimates of the probabilities of survival of male and female rats administered C. I. Solvent Yellow 14 in the diet at the concentrations of this bioassay, together with those of the control group, are shown by the Kaplan and Meier curves in Figure 2. No significant differences in survival were found between any group of rats. One female rat in the high-dose group was accidentally killed.

In male rats, 28/50 (56%) of the controls, 34/50 (68%) of the low-dose, and 34/50 (68%) of the high-dose group lived to the end of the study at 104 weeks. In female rats, 39/50 (78%) of the controls, 42/49 (86%) of the low-dose, and 38/50 (76%) of the high-dose group lived to the end of the study at 104 weeks. A sufficient number of rats were at risk for the development of late appearing tumors.

C. Pathology (Rats)

Histopathologic findings on neoplasms in rats are summarized in Appendix A, Tables A1 and A2; Tables A3 and A4 give the survival and tumor status for each individual animal in the male and female rat studies. Findings on nonneoplastic lesions are summarized in Appendix C, Tables C1 and C2.



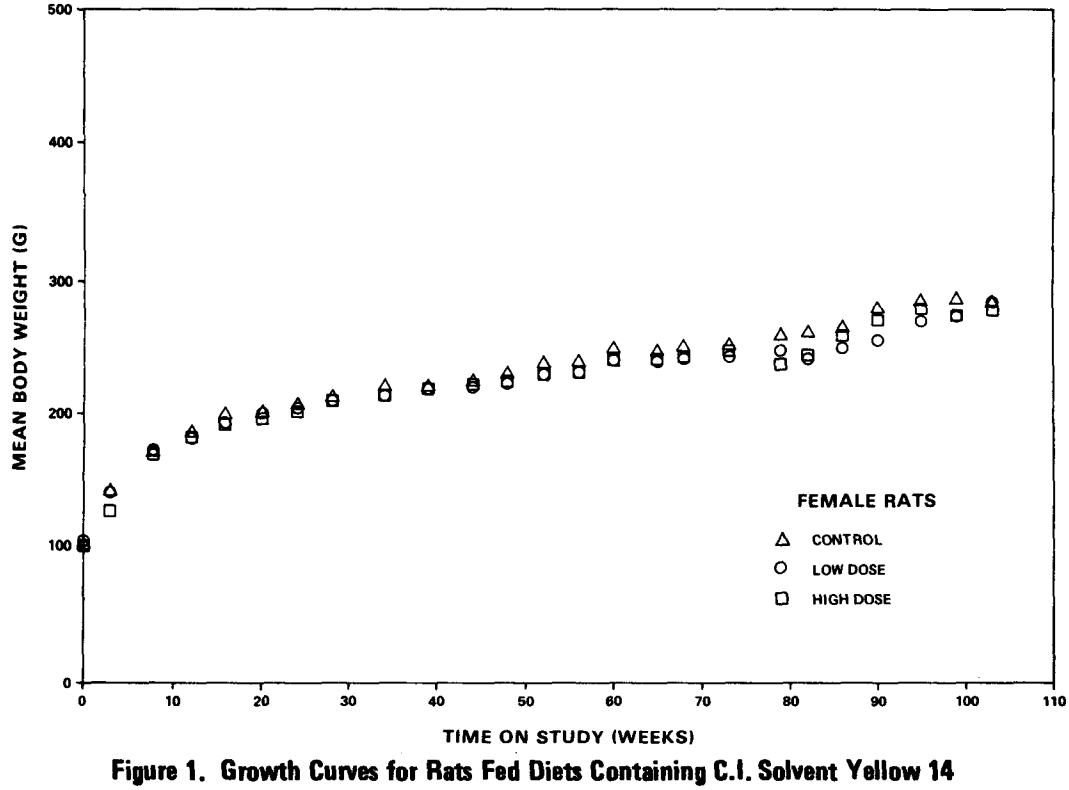


Figure 1. Growth Curves for Rats Fed Diets Containing C.I. Solvent Yellow 14

Table 6. Mean Body Weight Change (Relative to Controls) of Rats Fed Diets Containing C. I. Solvent Yellow 14

	Week No.	Cumulative Mean Body Weight Change (grams)			Weight Change Relative to Controls (a) %	
		Control	Low Dose	High Dose	Low Dose	High Dose
	0	131(b)	133(b)	133(b)		
Male	5	97	100	99	+3	+2
Rats	26	240	226	231	-6	-4
	46	275	260	261	-5	-5
	67	297	282	278	-5	-6
	88	282	265	261	-6	-7
	103	283	251	259	-11	-8
	0	103(b)	104(b)	102(b)		
Female	3	38	35	24	-8	-37
Rats	24	104	100	100	-4	-4
	44	122	115	120	-6	-2
	65	144	134	138	-7	-4
	86	163	145	156	-11	-4
	103	183	181	176	-1	-4

(a) Weight Change Relative to Controls =

$$\frac{\text{Weight Change (Dosed Group)} - \text{Weight Change (Control Group)}}{\text{Weight Change (Control Group)}} \times 100$$

(b) Initial weight.

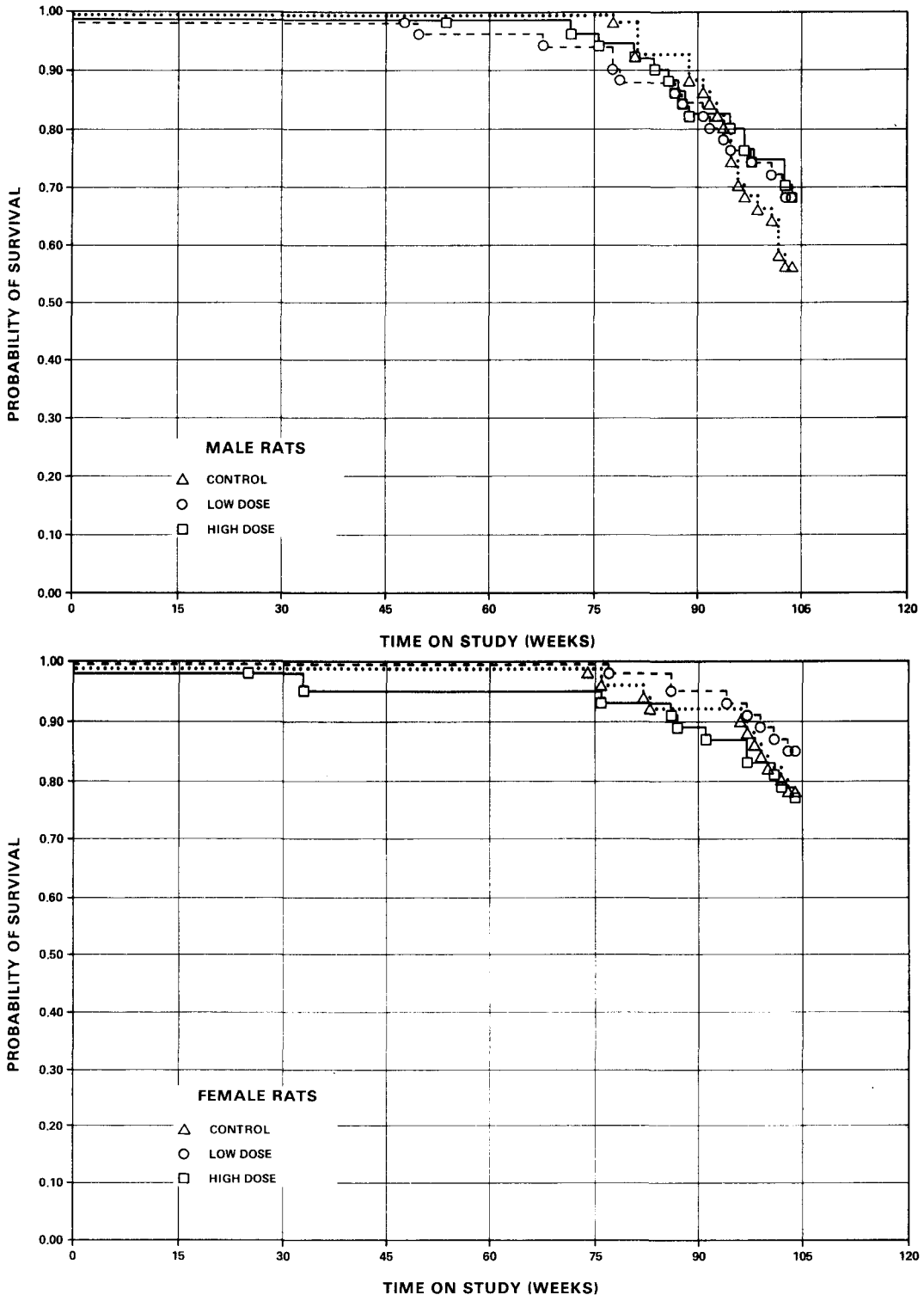


Figure 2. Survival Curves for Rats Fed Diets Containing C.I. Solvent Yellow 14

A variety of neoplasms are represented among both dosed and control animals. Many of the types of tumors represented have been encountered previously as spontaneous lesions in the rat (Goodman et al., 1979).

Neoplastic nodules of the liver were observed at an increased incidence in all dosed groups (males: controls, 5/50; low-dose, 10/50; high-dose 30/50; females: controls, 2/50; low-dose, 3/49; high-dose, 10/48). Many of the nodules within the liver were small and multiple. They were usually composed of eosinophilic or basophilic hepatocytes and were accompanied by an angiectactic or cystic change. Basophilic and clear cell changes were also generally dose related.

Nonneoplastic lesions considered associated with administration of C. I. Solvent Yellow 14 include: multifocal fibrosis of the cardiac valve (male: 3/50, 6%; 8/50, 16%; 11/50, 22%; female: 10/50, 20%; 17/49, 35%; 18/48, 38%), lymphoid hyperplasia of the lung in male rats (12/50, 24%; 28/50, 56%; 23/50, 46%), and in female rats: bile duct focal hyperplasia (23/50, 46%; 37/49, 76%; 38/48, 79%), atrophy of the pancreatic acinus (4/49, 8%; 22/49, 44%; 25/48, 52%), and nephropathy (11/50, 22%; 16/49, 33%; 25/48, 52%).

A variety of other nonneoplastic lesions were seen in dosed rats. These were the ususal types seen in aging F344 rats (Goodman et al., 1979) and were not considered to be associated with chemical administration.

The histopathologic examination provided evidence that C. I. Solvent Yellow 14 caused an increased incidence of neoplastic nodules of the liver in dosed F344 rats under the conditions of this bioassay.

D. Statistical Analyses of Results (Rats)

Tables 7 and 8 contain the statistical analyses of those primary tumors that met both of the following criteria: (1) At least two animals in one group had the tumor, and (2) The incidence in one or more groups was at least 5%.

Leukemia or lymphoma in male rats was observed in decreased incidence in the dosed groups compared with the control group (25/50, 50% in the controls; 2/50, 4% in the low-dose; and 4/50, 8% in the high-dose). The Cochran-Armitage test for linear trend was statistically significant in the negative direction (P less than 0.001), and the Fisher exact tests were significant (P less than 0.001 for both dosed groups). The historical incidence of untreated male F344 rats at this laboratory with lymphoma or leukemia is 93/240 (38.8%). Leukemia or lymphoma in female rats was also observed in decreasing incidence (11/50, 22% in the controls; 2/49, 4% in the low-dose; and 0/49, 0% in the high-dose). The Cochran-Armitage test for linear trend was statistically significant in the negative direction (P less than 0.001) and the Fisher exact tests were significant. The historical incidence of leukemia or lymphoma in untreated female control rats at this laboratory is 50/238 (21%).

Neoplastic nodules in male rats were observed in a statistically significant positive relation to dosage (5/50, 10% in the controls; 10/50, 20% in the low-dose; and 30/50, 60% in the high-dose). The Cochran-Armitage test for linear trend was statistically significant in the positive direction (P less than 0.001), and the Fisher exact test between the high-dose group and the control group was significant (P less than 0.001). The historical incidence of rats with neoplastic nodules is 11/239 (4.6%) in male controls and 8/238 (3.4%) in female controls at this laboratory. Neoplastic nodules in female rats were observed in a statistically significant positive relation (2/50, 4% in the controls; 3/49, 6% in the low-dose; 10/48, 21% in the high-dose). The Cochran-Armitage test for linear trend was statistically significant in the positive direction (P=0.005), and the Fisher exact test between the high-dose and the control group was significant (P=0.011). Several rats of either sex had carcinoma of the liver.

Chromophobe adenomas or carcinomas of the pituitary in female rats were observed in a statistically significant negative relation in the dosed groups compared with the control group. The Cochran-Armitage test for linear trend was statistically significant in the negative direction (P=0.023). The

values for the Fisher exact test between the high-dose group and the control group (P=0.028), and between the low-dose group and the control (P=0.035) are both above the value of P=0.025 required by the Bonferroni inequality criterion for an overall significance of P=0.05 when two dosed groups are compared with a common control group. In male rats, this tumor was not observed in a statistically significant proportion.

Table 7. Analyses of the Incidence of Primary Tumors in Male Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Subcutaneous Tissue: Fibroma (b)	3/50(6)	2/50(4)	6/50(12)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.667	2.000
Lower Limit		0.058	0.454
Upper Limit		5.570	11.761
Weeks to First Observed Tumor	95	78	97
Hematopoietic System: Lymphocytic Leukemia (b)	19/50(38)	1/50(2)	3/50(6)
P Values (c),(d)	P<0.001(N)	P<0.001(N)	P<0.001(N)
Departure from Linear Trend (f)	P=0.002		
Relative Risk (Untreated Control) (e)		0.053	0.158
Lower Limit		0.001	0.032
Upper Limit		0.308	0.492
Weeks to First Observed Tumor	89	92	72
Hematopoietic System: All Leukemias (b)	23/50(46)	1/50(2)	3/50(6)
P Values (c),(d)	P<0.001(N)	P<0.001(N)	P<0.001(N)
Departure from Linear Trend (f)	P<0.001		
Relative Risk (Untreated Control) (e)		0.043	0.130
Lower Limit		0.001	0.027
Upper Limit		0.248	0.393
Weeks to First Observed Tumor	89	92	72

Table 7. Analyses of the Incidence of Primary Tumors in Male Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Hematopoietic System:			
All Lymphomas or Leukemias (b)	25/50(50)	2/50(4)	4/50(8)
P Values (c),(d)	P<0.001(N)	P<0.001(N)	P<0.001(N)
Departure from Linear Trend (f)	P<0.001		
Relative Risk (Untreated Control) (e)		0.080	0.160
Lower Limit		0.010	0.044
Upper Limit		0.294	0.418
Weeks to First Observed Tumor	89	92	72
Liver: Neoplastic Nodule (b)	5/50(10)	10/50(20)	30/50(60)
P Values (c),(d)	P<0.001	N.S.	P<0.001
Relative Risk (Untreated Control) (e)		2.000	6.000
Lower Limit		0.675	2.595
Upper Limit		6.944	17.463
Weeks to First Observed Tumor	95	103	95
Liver: Hepatocellular Carcinoma (b)	1/50(2)	0/50(0)	2/50(4)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.000	2.000
Lower Limit		0.000	0.108
Upper Limit		18.658	115.621
Weeks to First Observed Tumor	104	--	103

Table 7. Analyses of the Incidence of Primary Tumors in Male Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Liver: Neoplastic Nodule or Hepatocellular Carcinoma (b)	6/50(12)	10/50(20)	31/50(62)
P Values (c),(d)	P<0.001	N.S.	P<0.001
Departure from Linear Trend (f)	P=0.030		
Relative Risk (Untreated Control) (e)		1.667	5.167
Lower Limit		0.597	2.408
Upper Limit		5.164	13.155
Weeks to First Observed Tumor	95	103	95
Pituitary: Chromophobe Adenoma (b)	5/44(11)	5/45(11)	4/43(9)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.978	0.819
Lower Limit		0.242	0.173
Upper Limit		3.960	3.545
Weeks to First Observed Tumor	92	104	76
Adrenal: Pheochromocytoma (b)	6/50(12)	6/49(12)	6/50(12)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.020	1.000
Lower Limit		0.293	0.287
Upper Limit		3.556	3.489
Weeks to First Observed Tumor	101	79	104

Table 7. Analyses of the Incidence of Primary Tumors in Male Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Thyroid: C-Cell Carcinoma (b)	3/50(6)	4/49(8)	2/50(4)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.361	0.667
Lower Limit		0.243	0.058
Upper Limit		8.854	5.570
Weeks to First Observed Tumor	97	104	104
Pancreatic Islets: Islet-Cell Adenoma (b)	4/50(8)	3/48(6)	0/46(0)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.781	0.000
Lower Limit		0.120	0.000
Upper Limit		4.374	1.170
Weeks to First Observed Tumor	81	104	--
Pancreatic Islets: Islet-Cell Adenoma or Carcinoma (b)	4/50(8)	3/48(6)	1/46(2)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.781	0.272
Lower Limit		0.120	0.006
Upper Limit		4.374	2.613
Weeks to First Observed Tumor	81	104	104

Table 7. Analyses of the Incidence of Primary Tumors in Male Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Testis: Interstitial-Cell Tumor (b)	48/50(96)	46/50(92)	47/50(94)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.958	0.979
Lower Limit		0.890	0.910
Upper Limit		1.071	1.076
Weeks to First Observed Tumor	78	68	72

(a) Dosed groups received doses of 250 or 500 ppm in the diet.
(b) Number of tumor-bearing animals/number of animals examined at site (percent).
(c) Beneath the incidence of tumors in the control group is the probability level for the Cochran-Armitage test when P is less than 0.05; otherwise, not significant (N.S.) is indicated. Beneath the incidence of tumors in a dosed group is the probability level for the Fisher exact test for the comparison of that dosed group with the untreated control group when P is less than 0.05; otherwise, not significant (N.S.) is indicated.
(d) A negative trend (N) indicates a lower incidence in a dosed group than in a control group.
(e) The 95 percent confidence interval of the relative risk between each dosed group and the control group.
(f) The probability level for departure from linear trend is given when P is less than 0.05 for any comparison.

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Subcutaneous Tissue:			
Fibroma (b)	0/50(0)	0/49(0)	3/49(6)
P Values (c),(d)	P=0.036	N.S.	N.S.
Relative Risk (Untreated Control) (e)		--	Infinite
Lower Limit		--	0.614
Upper Limit		--	Infinite
Weeks to First Observed Tumor	--	--	97
Hematopoietic System:			
Lymphocytic Leukemia (b)	9/50(18)	0/49(0)	0/49(0)
P Values (c),(d)	P<0.001(N)	P=0.001(N)	P=0.001(N)
Departure from Linear Trend (f)	P=0.029		
Relative Risk (Untreated Control) (e)		0.000	0.000
Lower Limit		0.000	0.000
Upper Limit		0.388	0.388
Weeks to First Observed Tumor	76	--	--
Hematopoietic System:			
All Leukemia (b)	9/50(18)	1/49(2)	0/49(0)
P Values (c),(d)	P<0.001(N)	P=0.009(N)	P=0.001(N)
Relative Risk (Untreated Control) (e)		0.113	0.000
Lower Limit		0.003	0.000
Upper Limit		0.771	0.388
Weeks to First Observed Tumor	76	103	--

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Hematopoietic System:			
All Lymphomas or Leukemias (b)	11/50(22)	2/49(4)	0/49(0)
P Values (c),(d)	P<0.001(N)	P=0.008(N)	P<0.001(N)
Relative Risk (Untreated Control) (e)		0.186	0.000
Lower Limit		0.021	0.000
Upper Limit		0.793	0.307
Weeks to First Observed Tumor	76	103	--
Liver: Neoplastic Nodule (b)	2/50(4)	3/49(6)	10/48(21)
P Values (c),(d)	P=0.005	N.S.	P=0.011
Relative Risk (Untreated Control) (e)		1.531	5.208
Lower Limit		0.183	1.189
Upper Limit		17.671	46.803
Weeks to First Observed Tumor	104	104	91
Liver: Hepatocellular Carcinoma (b)	0/50(0)	0/49(0)	2/48(4)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		--	Infinite
Lower Limit		--	0.308
Upper Limit		--	Infinite
Weeks to First Observed Tumor	--	--	104

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Liver: Neoplastic Nodule or Hepatocellular Carcinoma (b)	2/50(4)	3/49(6)	11/48(23)
P Values (c),(d)	P=0.003	N.S.	P=0.006
Relative Risk (Untreated Control) (e)		1.531	5.729
Lower Limit		0.183	1.342
Upper Limit		17.671	50.869
Weeks to First Observed Tumor	104	104	91
Pituitary: Chromophobe Adenoma (b)	28/44(64)	19/45(42)	18/46(39)
P Values (c),(d)	P=0.014(N)	P=0.035(N)	P=0.017(N)
Relative Risk (Untreated Control) (e)		0.663	0.615
Lower Limit		0.430	0.392
Upper Limit		1.029	0.968
Weeks to First Observed Tumor	96	94	87
Pituitary: Chromophobe Adenoma or Carcinoma (b)	28/44(64)	19/45(42)	19/46(41)
P Values (c),(d)	P=0.023(N)	P=0.035(N)	P=0.028(N)
Relative Risk (Untreated Control) (e)		0.663	0.649
Lower Limit		0.430	0.420
Upper Limit		1.029	1.009
Weeks to First Observed Tumor	96	94	87

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Adrenal: Pheochromocytoma (b)	0/49(0)	1/48(2)	3/48(6)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		Infinite	Infinite
Lower Limit		0.555	0.614
Upper Limit		Infinite	Infinite
Weeks to First Observed Tumor	--	104	86
Thyroid: C-Cell Carcinoma (b)	2/50(4)	3/49(6)	3/48(6)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.531	1.563
Lower Limit		0.183	0.187
Upper Limit		17.671	18.028
Weeks to First Observed Tumor	104	104	104
Mammary Gland: Fibroadenoma (b)	7/50(14)	8/49(16)	7/49(14)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.166	1.020
Lower Limit		0.401	0.330
Upper Limit		3.489	3.155
Weeks to First Observed Tumor	97	77	86

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Mammary Gland:			
Cystfibroadenoma (b)	4/50(8)	2/49(4)	3/49(6)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.510	0.765
Lower Limit		0.048	0.118
Upper Limit		3.383	4.288
Weeks to First Observed Tumor	104	101	102
Mammary Gland: Adenoma, NOS			
or Adenocarcinoma, NOS (b)	2/50(4)	3/50(6)	0/50(0)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.500	0.000
Lower Limit		0.180	0.000
Upper Limit		17.329	3.381
Weeks to First Observed Tumor	104	103	--
Uterus: Endometrial Stromal			
Polyp (b)	18/49(37)	20/47(43)	11/48(23)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.158	0.624
Lower Limit		0.672	0.300
Upper Limit		2.002	1.238
Weeks to First Observed Tumor	97	94	104

Table 8. Analyses of the Incidence of Primary Tumors in Female Rats Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

(a) Dosed groups received doses of 250 or 500 ppm in the diet.
(b) Number of tumor-bearing animals/number of animals examined at site (percent).
(c) Beneath the incidence of tumors in the control group is the probability level for the Cochran-Armitage test when P is less than 0.05; otherwise, not significant (N.S.) is indicated. Beneath the incidence of tumors in a dosed group is the probability level for the Fisher exact test for the comparison of that dosed group with the untreated control group when P is less than 0.05; otherwise, not significant (N.S.) is indicated.
(d) A negative trend (N) indicates a lower incidence in a dosed group than in a control group.
(e) The 95 percent confidence interval of the relative risk between each dosed group and the control group.
(f) The probability level for departure from linear trend is given when P is less than 0.05 for any comparison.

IV. RESULTS - MICE

A. Body Weights and Clinical Signs (Mice)

Mean body weights of all dosed mice were slightly lower than those of the controls after week 30 in males and after week 50 in females (Figure 3 and Table 9). No compound-related clinical signs or effects on feed consumption were observed (Appendix H).

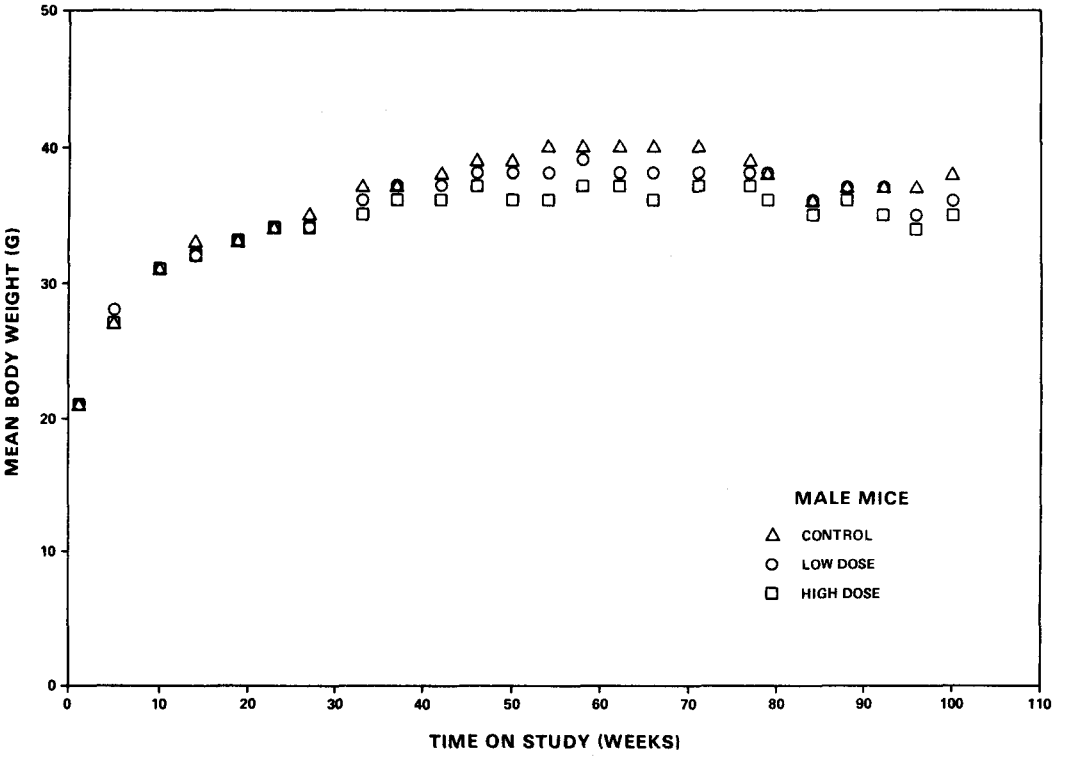
B. Survival (Mice)

Estimates of the probabilities of survival of male and female mice administered C. I. Solvent Yellow 14 in the diet at the concentrations of this bioassay, together with those of the control group, are shown by the Kaplan and Meier curves in Figure 4. No significant differences in survival were observed between any of the groups of either sex of mice. One male control animal was reported missing.

In male mice, 44/50 (88%) of the controls, 42/50 (84%) of the low-dose, and 39/50 (78%) of the high-dose group lived to the end of the study at 105 weeks. In female mice, 36/50 (72%) of the controls, 41/50 (82%) of the low-dose, and 37/50 (74%) of the high-dose group lived to the end of the study at 105 weeks.

C. Pathology (Mice)

Histopathologic findings on neoplasms in mice are summarized in Appendix B, Tables B1 and B2; Tables B3 and B4 give the survival and tumor status for each individual animal in the male and female mouse studies. Findings on nonneoplastic lesions are summarized in Appendix D, Tables D1 and D2.



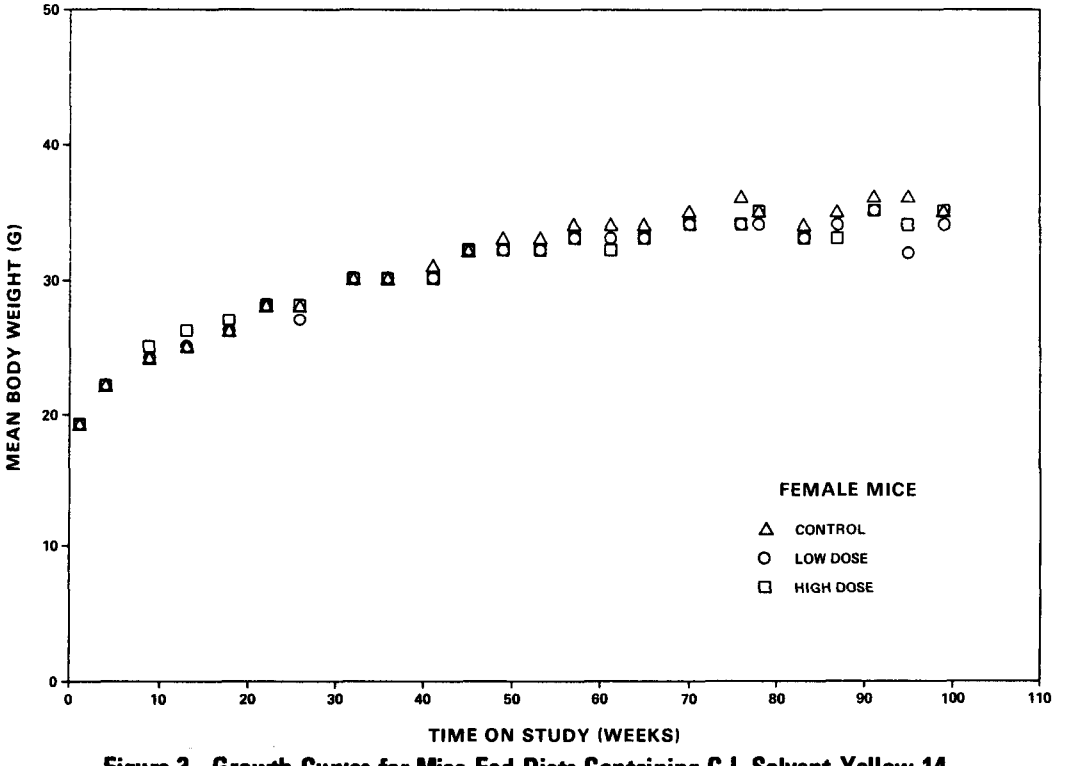


Figure 3. Growth Curves for Mice Fed Diets Containing C.I. Solvent Yellow 14

Table 9. Mean Body Weight Change (Relative to Controls) of Mice Fed Diets Containing C. I. Solvent Yellow 14

		Cumulative Mean Body Weight Change (grams)			Weight Change Relative to Controls (a) %	
	Week No.	Control	Low Dose	High Dose	Low Dose	High Dose
	0	21(b)	21(b)	21(b)		
Male	5	6	7	6	+17	0
Mice	23	13	13	13	0	0
	42	17	16	15	-6	-12
	62	19	17	16	-11	-16
	84	15	15	14	0	-7
	100	17	15	14	-12	-18
	0	19(b)	19(b)	19(b)		
Female	4	3	3	3	0	0
Mice	26	9	8	9	-11	0
	45	13	13	13	0	0
	65	15	14	14	-7	-7
	87	16	15	14	-6	-13
	99	16	15	16	-6	0

(d) Weight Change Relative to Controls =

$$\frac{\text{Weight Change (Dosed Group)} - \text{Weight Change (Control Group)}}{\text{Weight Change (Control Group)}} \times 100$$

(b) Initial weight.

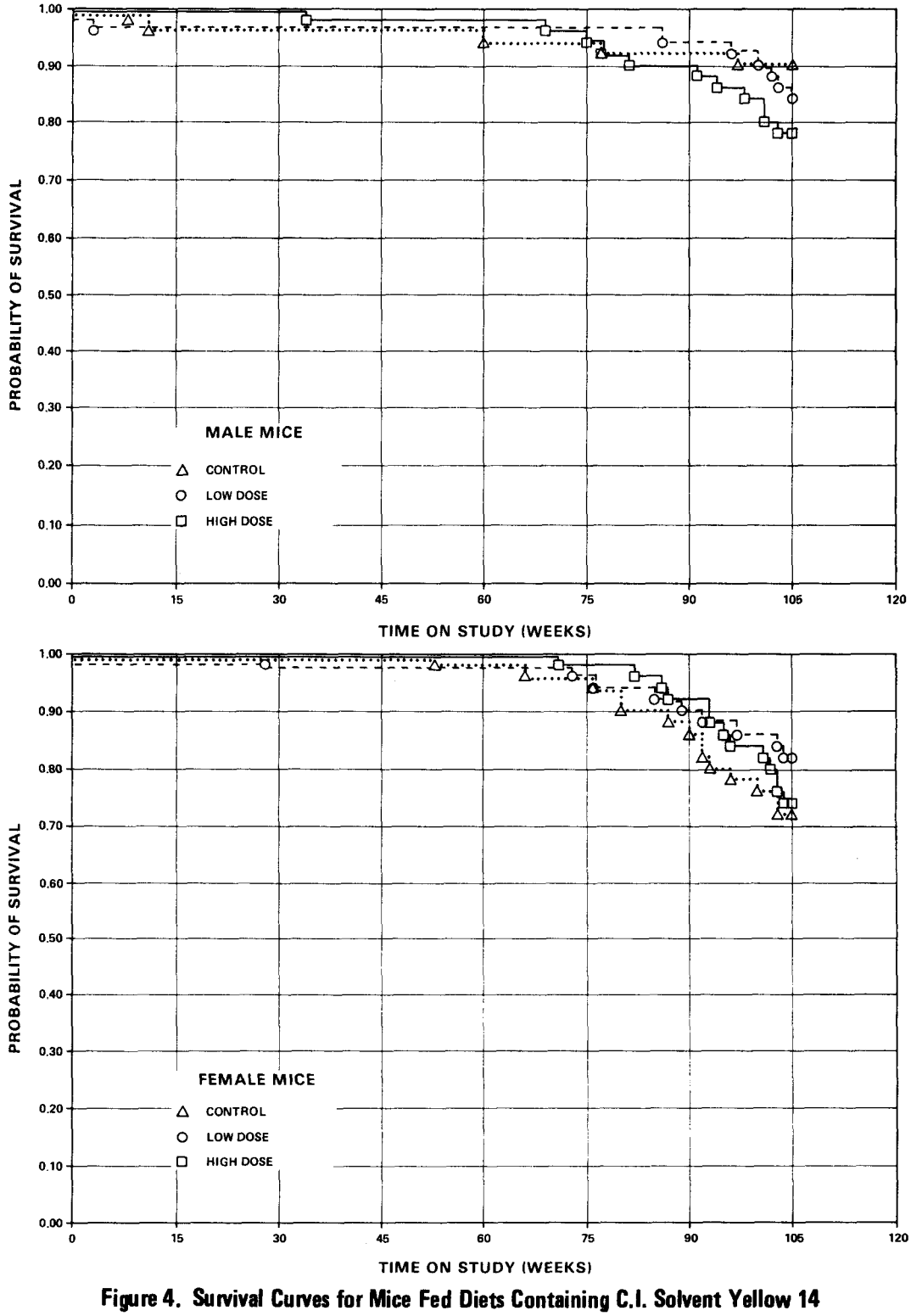


Figure 4. Survival Curves for Mice Fed Diets Containing C.I. Solvent Yellow 14

A variety of neoplasms are represented among both dosed and control animals. Each type of tumor represented has been encountered previously as a spontaneous lesion in aging B6C3F1 mice (Ward et al., 1979).

A number of female mice from both dosed groups and control groups were diagnosed as having leukemia or malignant lymphomas of various types and in various locations (12/50 in the controls, 23/50 in the low-dose, and 17/50 in the high-dose). There was no corresponding increased incidence of lymphoid hyperplasias.

A variety of nonneoplastic lesions are represented among both control and dosed animals. Such lesions have been encountered previously in aging B6C3F1 mice (Ward et al., 1979), and they are not considered to be compound related.

D. Statistical Analyses of Results (Mice)

Tables 10 and 11 contain the statistical analyses of those primary tumors that occurred in at least two animals of one group and with an incidence of at least 5% in one or more groups.

Lymphomas or leukemias in female mice were observed in a statistically significant positive association in the low-dose group compared with the controls (12/50, 24% in the controls; 23/50, 46% in the low-dose; and 17/50, 34% in the high-dose). The Cochran-Armitage test for linear trend was not significant, but there was a departure from linear trend (P=0.039) due to increased incidence in the low-dose group compared with the other two groups. The Fisher exact test between the low-dose group and the control group was significant (P=0.018), but no significant incidence was observed in the high-dose group. The historical incidence of female mice at this laboratory with leukemia or lymphoma is 70/300 (23.3%), ranging from 20% to 32%. In the absence of significant results in the high-dose group, the association between these tumors and administration of the test substance is not clear. Life table analysis, using the week that an animal died as the time point of

examination for tumors, indicated no significant result. In male mice, this tumor was not observed in a statistically significant proportion.

Time-adjusted tests, eliminating those animals dying before 52 weeks on study, did not materially alter the results reported above since only two control animals, three low-dose animals, and one high-dose animal died before week 52.

Table 10. Analyses of the Incidence of Primary Tumors in Male Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Lung: Alveolar/Bronchiolar Adenoma (b)	4/49(8)	6/50(12)	7/50(14)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.470	1.715
Lower Limit		0.372	0.467
Upper Limit		6.681	7.525
Weeks to First Observed Tumor	77	105	105
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma (b)	5/49(10)	7/50(14)	7/50(14)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.372	1.372
Lower Limit		0.403	0.403
Upper Limit		5.129	5.129
Weeks to First Observed Tumor	77	105	105
Hematopoietic System: Malignant Lymphoma Lymphocytic Type (b)	0/49(0)	1/50(2)	3/50(6)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		Infinite	Infinite
Lower Limit		0.053	0.590
Upper Limit		Infinite	Infinite
Weeks to First Observed Tumor	—	105	81

Table 10. Analyses of the Incidence of Primary Tumors in Male Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Hematopoietic System:			
Malignant Lymphoma,			
Histiocytic Type (b)	3/49(6)	8/50(16)	5/50(10)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		2.613	1.633
Lower Limit		0.672	0.337
Upper Limit		14.517	10.018
Weeks to First Observed Tumor	105	96	98
Hematopoietic System:			
All Lymphoma (b)	5/49(10)	10/50(20)	9/50(18)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.960	1.764
Lower Limit		0.662	0.574
Upper Limit		6.803	6.247
Weeks to First Observed Tumor	105	96	81
Hematopoietic System:			
All Lymphoma or Leukemia (b)	5/49(10)	10/50(20)	10/50(20)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.960	1.960
Lower Limit		0.662	0.662
Upper Limit		6.803	6.803
Weeks to First Observed Tumor	105	96	69

Table 10. Analyses of the Incidence of Primary Tumors in Male Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Liver: Hepatocellular Adenoma (b)	5/49(10)	3/50(6)	7/50(14)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.588	1.372
Lower Limit		0.096	0.403
Upper Limit		2.851	5.129
Weeks to First Observed Tumor	105	105	105
Liver: Hepatocellular Carcinoma (b)	10/49(20)	9/50(18)	12/50(24)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.882	1.176
Lower Limit		0.348	0.515
Upper Limit		2.203	2.752
Weeks to First Observed Tumor	77	86	77
Liver: Hepatocellular Adenoma or Carcinoma (b)	15/49(31)	11/50(22)	19/50(38)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.719	1.241
Lower Limit		0.334	0.681
Upper Limit		1.500	2.302
Weeks to First Observed Tumor	77	86	77

Table 10. Analyses of the Incidence of Primary Tumors in Male Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

(a) Dosed groups received doses of 500 or 1,000 ppm in the diet.
(b) Number of tumor-bearing animals/number of animals examined at site (percent).
(c) Beneath the incidence of tumors in the control group is the probability level for the Cochran-Armitage test when P is less than 0.05; otherwise, not significant (N.S.) is indicated. Beneath the incidence of tumors in a dosed group is the probability level for the Fisher exact test for the comparison of that dosed group with the untreated control group when P is less than 0.05; otherwise, not significant (N.S.) is indicated.
(d) A negative trend (N) indicates a lower incidence in a dosed group than in a control group.
(e) The 95 percent confidence interval of the relative risk between each dosed group and the control group.

Table 11. Analyses of the Incidence of Primary Tumors in Female Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Lung: Alveolar/Bronchiolar Adenoma (b)	2/50(4)	5/50(10)	3/49(6)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		2.500	1.531
Lower Limit		0.432	0.183
Upper Limit		25.286	17.671
Weeks to First Observed Tumor	105	105	105
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma (b)	3/50(6)	6/50(12)	4/49(8)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		2.000	1.361
Lower Limit		0.454	0.243
Upper Limit		11.761	8.854
Weeks to First Observed Tumor	66	76	105
Hematopoietic System: Malignant Lymphoma, Histiocytic Type (b)	5/50(10)	15/50(30)	12/50(24)
P Values (c),(d)	N.S.	P=0.011	N.S.
Relative Risk (Untreated Control) (e)		3.000	2.400
Lower Limit		1.135	0.857
Upper Limit		9.740	8.071
Weeks to First Observed Tumor	80	73	82

Table 11. Analyses of the Incidence of Primary Tumors in Female Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Hematopoietic System:			
All Lymphomas (b)	9/50(18)	23/50(46)	17/50(34)
P Values (c),(d)	N.S.	P=0.002	N.S.
Departure from Linear Trend (f)	P=0.014		
Relative Risk (Untreated Control) (e)		2.556	1.889
Lower Limit		1.283	0.887
Upper Limit		5.543	4.322
Weeks to First Observed Tumor	80	73	82
Hematopoietic System:			
Leukemia (b)	3/50(6)	0/50(0)	0/50(0)
P Values (c),(d)	P=0.037(N)	N.S.	N.S.
Relative Risk (Untreated Control) (e)		0.000	0.000
Lower Limit		0.000	0.000
Upper Limit		1.663	1.663
Weeks to First Observed Tumor	53	--	--
Hematopoietic System			
Lymphoma or Leukemia (b)	12/50(24)	23/50(46)	17/50(34)
P Values (c),(d)	N.S.	P=0.018	N.S.
Departure from Linear Trend (f)	P=0.039		
Relative Risk (Untreated Control) (e)		1.917	1.417
Lower Limit		1.040	0.716
Upper Limit		3.693	2.892
Weeks to First Observed Tumor	53	73	82

Table 11. Analyses of the Incidence of Primary Tumors in Female Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

Topography: Morphology	Untreated Control	Low Dose	High Dose
Liver: Hepatocellular Carcinoma (b)	2/50(4)	3/50(6)	4/50(8)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		1.500	2.000
Lower Limit		0.180	0.301
Upper Limit		17.329	21.316
Weeks to First Observed Tumor	105	105	101
Liver: Hepatocellular Adenoma or Carcinoma (b)	2/50(4)	4/50(8)	6/50(12)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		2.000	3.000
Lower Limit		0.301	0.569
Upper Limit		21.316	29.254
Weeks to First Observed Tumor	105	105	101
Thyroid: Follicular-Cell Adenoma (b)	0/49(0)	3/47(6)	1/47(2)
P Values (c),(d)	N.S.	N.S.	N.S.
Relative Risk (Untreated Control) (e)		Infinite	Infinite
Lower Limit		0.628	0.056
Upper Limit		Infinite	Infinite
Weeks to First Observed Tumor	—	105	104

Table 11. Analyses of the Incidence of Primary Tumors in Female Mice Fed Diets Containing C. I. Solvent Yellow 14 (a)

(Continued)

(a) Dosed groups received doses of 500 or 1,000 ppm in the diet.
(b) Number of tumor-bearing animals/number of animals examined at site (percent).
(c) Beneath the incidence of tumors in the control group is the probability level for the Cochran-Armitage test when P is less than 0.05; otherwise, not significant (N.S.) is indicated. Beneath the incidence of tumors in a dosed group is the probability level for the Fisher exact test for the comparison of that dosed group with the untreated control group when P is less than 0.05; otherwise, not significant (N.S.) is indicated.
(d) A negative trend (N) indicates a lower incidence in a dosed group than in a control group.
(e) The 95 percent confidence interval of the relative risk between each dosed group and the control group.
(f) The probability level for departure from linear trend is given when P is less than 0.05 for any comparison.

V. DISCUSSION

During the second year of the study, mean body weights of dosed rats and mice of either sex were lower than those of the corresponding controls. No compound-related clinical signs or effects on survival were observed. Compound-related nonneoplastic lesions in the kidney were observed in rats and mice of either sex in the subchronic studies. Compound-related nonneoplastic lesions in the kidney were observed only in female rats (nephropathy: 11/50, 16/49, 25/48) in the chronic studies.

Although lymphomas occurred in low-dose female mice at an incidence significantly higher than that in the controls, neither the incidence in the high-dose group nor the results of life table analysis were significant. In addition, the results of the Cochran-Armitage test for linear trend were not significant, and thus the association between the administration of the C. I. Solvent Yellow 14 and lymphomas in the female mice was not clearly established; these lesions were elevated slightly in dosed male mice. Leukemia or lymphoma occurred in dosed rats of either sex at incidences significantly lower than those of the corresponding controls.

Neoplastic nodules of the liver occurred with a statistically significant dose-related trend in rats of either sex, and the incidences in the high-dose groups were significantly higher than those in the controls. A compound-related increased incidence of neoplastic nodules is considered to be indicative of the carcinogenic potential of a compound (IARC, 1980). The biological significance of neoplastic nodules of the rat liver has been the subject of considerable discussion. While certain studies have shown a regression of some neoplastic nodules when carcinogen administration was halted (Farber, 1973; Goldfarb and Zak, 1961; and Teebor and Becker, 1971), certain others have observed progression of these lesions (Reuber, 1965; Sasaki and Yoshida, 1935; and Williams and Yamato, 1972). It has been speculated that diverse results arose from use of imprecise criteria for identifying the nodules and from the different strains of rats being used. In an attempt to resolve this dilemma, a recent study using histochemically

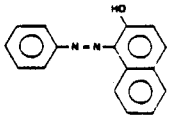
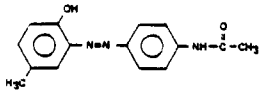
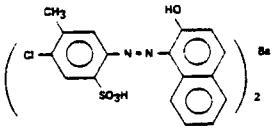
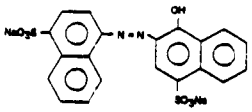
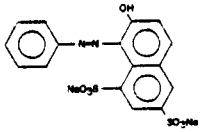
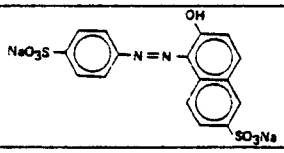
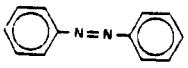
defined criteria for neoplastic nodules in the F344 rat observed continued growth of the nodules following cessation of carcinogen administration, confirming their neoplastic nature (Hirota and Williams, 1979). No evidence to support progression of the nodules to carcinoma was found (Ohmori et al., 1980). This type of information has led several groups to conclude that, while evidence supporting the progression of neoplastic nodules to carcinoma may be inconclusive, these nodules are true neoplasms and hence are indicative of potential carcinogenic risk to humans (IARC, 1980; Squire and Levitt, 1975; Nat. Acad. Sci., 1980). In this study, the dose-related increased incidences of these liver lesions in both male and female rats are considered to be unequivocal evidence of a carcinogenic response to the dietary administration of C. I. Solvent Yellow 14.

Two other water-insoluble monoazo dyes were found to be carcinogenic in bioassays conducted by NCI/NTP. Administration of D and C Red No. 9 was associated with statistically significant increased incidences of fibrosarcomas in the spleen and neoplastic nodules in the liver of male F344 rats, and administration of C. I. Disperse Yellow 3 was associated with statistically significant increased incidences of neoplastic nodules of the liver in male F344 rats and of hepatocellular adenomas in female B6C3F1 mice. In contrast, three water-soluble monoazo dyes (FD&C Yellow No. 6, C. I. Acid Red 14, and C. I. Acid Orange 10) were not found to be carcinogenic. Details of these studies and of azobenzene and aniline hydrochloride are given in Table 12.

Water insoluble and water soluble azo dyes can be reductively cleaved by intestinal bacteria (Childs et al., 1967; Radomski, 1961; and Ryan et al., 1968). The relative toxicity of other azo dyes (Ponceau R, D&C Red No. 9, and D&C Red No. 10) has been correlated with the lipid solubility of their possible metabolites after reductive cleavage of the azo bond (Radomski, 1974). Lipid soluble compounds are generally absorbed more readily by animals than are water soluble compounds (Doull et al., 1980). The presence or absence of carcinogenic effects from the azo dyes studied in the Bioassay Program may be correlated with the extent of absorption of the dyes and their

metabolites -- absorption is greater for water insoluble dyes which yield lipid soluble metabolites and is less for water soluble dyes which yield lipid insoluble metabolites.

Table 12. Comparison of Results of Chronic Feeding Studies of Water-Soluble and Water-Insoluble Monoazo Dyes and Related Compounds

Test Substance	Structure	Species	Sex	Dose (ppm)	Duration (Weeks)	Site and Type of Lesion Observed: Liver	Site and Type of Lesion Observed: Spleen
C. I. Solvent Yellow 14 (a) (Present Study) Water Insoluble		Rat (F344)	M	500	103	N (b)	
			F	500	103	N	
		Mouse (B6C3F1)	M	1,000	103		
			F	1,000	103		
C. I. Disperse Yellow No. 3 (a) (NTP, 1982a) Water Insoluble		Rat (F344)	M	10,000	103	N	
			F	10,000	103		
		Mouse (B6C3F1)	M	5,000	103		
			F	5,000	103	N	
D & C Red No. 9 (a) (NTP, 1982b) Water Insoluble		Rat (F344)	M	3,000	103	N	N
			F	3,000	103		
		Mouse (B6C3F1)	M	2,000	103		
			F	2,000	103		
C. I. Acid Red 14 (c) (NTP, 1982c) Water Soluble		Rat (F344)	M	12,500	103		
			F	25,000	103		
		Mouse (B6C3F1)	M	6,000	103		
			F	6,000	103		
C. I. Acid Orange 10 (NTP, 1982d) Water Soluble		Rat (F344)	M	3,000 (d)	103	D (e)	
			F	3,000 (d)	103		
		Mouse (B6C3F1)	M	6,000 (d)	103		
			F	6,000 (d)	103		
FD & C Yellow (c) No. 6 (NTP, 1981) Water Soluble		Rat (F344)	M	25,000	103		
			F	25,000	103		
		Mouse (B6C3F1)	M	25,000	103		
			F	25,000	103		
Azobenzene (NCI, 1979)		Rat (F344)	M	400	105-106		N
			F	400	105-106		N
		Mouse (B6C3F1)	M	400	105-106		
			F	545	105-106		
Aniline Hydrochloride (NCI, 1978)		Rat (F344)	M	6,000	103		N
			F	6,000	103		N
		Mouse (B6C3F1)	M	12,000	103		
			F	12,000	103		

(a) C. I. Solvent Yellow 14, C. I. Disperse Yellow No. 3, and D & C Red No. 9 were on test in the same room.
(b) N = Neoplastic lesion.
(c) C. I. Acid Red 14, C. I. Acid Orange 10, and FD & C Yellow No. 6 were on test in the same room.
(d) May not be maximum tolerated dose.
(e) D = Neoplastic lesion occurred only with significant dose-related trend. Results of the Fisher exact test were not significant.

VI. CONCLUSION

Under the conditions of this bioassay, C. I. Solvent Yellow 14 was carcinogenic in male and female F344/N rats, as evidenced by increased incidences of neoplastic nodules of the liver. C. I. Solvent Yellow 14 was not carcinogenic for B6C3F1 mice of either sex.

VII. BIBLIOGRAPHY

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APPENDIX A

Summary of the Incidence of Neoplasms
in Rats Fed Diets Containing C. I. Solvent Yellow 14

TABLE A1.

SUMMARY OF THE INCIDENCE OF NEOPLASMS IN MALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS NECROPSIED	50	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	50	50
INTEGUMENTARY SYSTEM			
*SKIN	(50)	(50)	(50)
SQUAMOUS CELL CARCINOMA		1 (2%)	
FIBROMA		1 (2%)	
CARCINOSARCOMA		1 (2%)	
*SUBCUT TISSUE	(50)	(50)	(50)
SQUAMOUS CELL CARCINOMA			1 (2%)
BASAL-CELL TUMOR			1 (2%)
FIBROMA	3 (6%)	2 (4%)	6 (12%)
FIBROSARCOMA	2 (4%)		
NEURILEMOMA, MALIGNANT	1 (2%)		
RESPIRATORY SYSTEM			
*NASAL CAVITY	(50)	(50)	(50)
SQUAMOUS CELL CARCINOMA, INVASIV			1 (2%)
#LUNG	(50)	(50)	(50)
CARCINOSARCOMA, METASTATIC		1 (2%)	
MESOTHELIOMA, METASTATIC	1 (2%)		
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
MALIGNANT LYMPHOMA, NOS	1 (2%)		
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE		1 (2%)	
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	1 (2%)		
LEUKEMIA,NOS	4 (8%)		
LYMPHOCYTIC LEUKEMIA	19 (38%)	1 (2%)	3 (6%)
#SPLEEN	(50)	(50)	(50)
FIBROSARCOMA			2 (4%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A1. MALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#CERVICAL LYMPH NODE	(47)	(45)	(41)
ASTROCYTOMA, METASTATIC		1 (2%)	
#MESENTERIC L. NODE	(47)	(45)	(41)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE			1 (2%)
CIRCULATORY SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
ANGIOSARCOMA		1 (2%)	
#SPLEEN	(50)	(50)	(50)
HEMANGIOSARCOMA			1 (2%)
DIGESTIVE SYSTEM			
#LIVER	(50)	(50)	(50)
NEOPLASTIC NODULE	5 (10%)	10 (20%)	30 (60%)
HEPATOCELLULAR CARCINOMA	1 (2%)		2 (4%)
#PANCREAS	(50)	(48)	(46)
ACINAR-CELL ADENOMA			1 (2%)
#CARDIAC STOMACH	(50)	(50)	(49)
SQUAMOUS CELL PAPILLOMA			2 (4%)
LEIOMYOSARCOMA	1 (2%)		
#JEJUNUM	(47)	(45)	(47)
LEIOMYOMA			1 (2%)
#ILEUM	(47)	(45)	(47)
ADENOCARCINOMA, NOS			1 (2%)
PAPILLARY ADENOCARCINOMA		1 (2%)	
#COLON	(50)	(48)	(47)
ADENOMATOUS POLYP, NOS			1 (2%)
URINARY SYSTEM			
#KIDNEY	(50)	(50)	(50)
TUBULAR-CELL ADENOMA	1 (2%)	1 (2%)	

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A1. MALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#KIDNEY/PELVIS	(50)	(50)	(50)
TRANSITIONAL-CELL PAPILLOMA		1 (2%)	
#URINARY BLADDER	(47)	(46)	(45)
TRANSITIONAL-CELL PAPILLOMA			1 (2%)
ENDOCRINE SYSTEM			
#PITUITARY	(44)	(45)	(43)
CARCINOMA,NOS		1 (2%)	
ADENOMA, NOS	1 (2%)	1 (2%)	
CHROMOPHOBE ADENOMA	5 (11%)	5 (11%)	4 (9%)
#ADRENAL	(50)	(49)	(50)
CORTICAL ADENOMA			1 (2%)
PHEOCHROMOCYTOMA	6 (12%)	6 (12%)	6 (12%)
GANGLIONEUROBLASTOMA			1 (2%)
#ADRENAL MEDULLA	(50)	(49)	(50)
GANGLIONEUROBLASTOMA		2 (4%)	1 (2%)
#THYROID	(50)	(49)	(50)
C-CELL CARCINOMA	3 (6%)	4 (8%)	2 (4%)
#PANCREATIC ISLETS	(50)	(48)	(46)
ISLET-CELL ADENOMA	4 (8%)	3 (6%)	
ISLET-CELL CARCINOMA			1 (2%)
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(50)	(50)	(50)
ADENOMA, NOS		1 (2%)	
FIBROADENOMA	2 (4%)	1 (2%)	1 (2%)
*PREPUTIAL GLAND	(50)	(50)	(50)
CARCINOMA,NOS	1 (2%)		
ADENOMA, NOS	1 (2%)	1 (2%)	1 (2%)
#PROSTATE	(48)	(42)	(47)
PAPILLARY ADENOMA		2 (5%)	
#TESTIS	(50)	(50)	(50)
INTERSTITIAL-CELL TUMOR	48 (96%)	46 (92%)	47 (94%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A1. MALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
NERVOUS SYSTEM			
#BRAIN/MENINGES	(50)	(50)	(50)
GRANULAR-CELL TUMOR, NOS			1 (2%)
#BRAIN	(50)	(50)	(50)
ASTROCYTOMA		1 (2%)	
#CEREBELLUM	(50)	(50)	(50)
ASTROCYTOMA		1 (2%)	
#MEDULLA OBLONGATA	(50)	(50)	(50)
GRANULAR-CELL TUMOR, NOS	1 (2%)		
SPECIAL SENSE ORGANS			
NONE			
MUSCULOSKELETAL SYSTEM			
NONE			
BODY CAVITIES			
*TUNICA VAGINALIS	(50)	(50)	(50)
MESOTHELIOMA, NOS		1 (2%)	
ALL OTHER SYSTEMS			
*MULTIPLE ORGANS	(50)	(50)	(50)
MESOTHELIOMA, MALIGNANT	1 (2%)		
ORBITAL REGION			
SQUAMOUS CELL CARCINOMA, INVASIV			1

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A1. MALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ANIMAL DISPOSITION SUMMARY			
ANIMALS INITIALLY IN STUDY	50	50	50
NATURAL DEATH@	14	12	11
MORIBUND SACRIFICE	8	4	5
SCHEDULED SACRIFICE			
ACCIDENTALLY KILLED			
TERMINAL SACRIFICE	28	34	34
ANIMAL MISSING			
TUMOR SUMMARY			
TOTAL ANIMALS WITH PRIMARY TUMORS*	50	48	49
TOTAL PRIMARY TUMORS	112	97	120
TOTAL ANIMALS WITH BENIGN TUMORS	49	46	49
TOTAL BENIGN TUMORS	71	71	73
TOTAL ANIMALS WITH MALIGNANT TUMORS	28	13	14
TOTAL MALIGNANT TUMORS	35	15	16
TOTAL ANIMALS WITH SECONDARY TUMORS#	1	2	1
TOTAL SECONDARY TUMORS	1	2	2
TOTAL ANIMALS WITH TUMORS UNCERTAIN-BENIGN OR MALIGNANT	6	11	30
TOTAL UNCERTAIN TUMORS	6	11	31
TOTAL ANIMALS WITH TUMORS UNCERTAIN-PRIMARY OR METASTATIC			
TOTAL UNCERTAIN TUMORS			

@ INCLUDES AUTOLYZED ANIMALS

* PRIMARY TUMORS: ALL TUMORS EXCEPT SECONDARY TUMORS
# SECONDARY TUMORS: METASTATIC TUMORS OR TUMORS INVASIVE INTO AN ADJACENT ORGAN

TABLE A2.

SUMMARY OF THE INCIDENCE OF NEOPLASMS IN FEMALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	49	50
ANIMALS NECROPSIED	50	49	49
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	49	48
INTEGUMENTARY SYSTEM			
*SUBCUT TISSUE	(50)	(49)	(49)
SQUAMOUS CELL CARCINOMA	1 (2%)		
SARCOMA, NOS	1 (2%)		
FIBROMA			3 (6%)
FIBROSARCOMA			1 (2%)
RESPIRATORY SYSTEM			
#LUNG	(50)	(49)	(48)
CARCINOMA,NOS			1 (2%)
ALVEOLAR/BRONCHIOLAR CARCINOMA		1 (2%)	1 (2%)
CORTICAL CARCINOMA, METASTATIC			1 (2%)
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(50)	(49)	(49)
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE	2 (4%)		
MALIG.LYMPHOMA, HISTIOCYTIC TYPE		1 (2%)	
LEUKEMIA,NOS		1 (2%)	
LYMPHOCYTIC LEUKEMIA	9 (18%)		
CIRCULATORY SYSTEM			
NONE			
DIGESTIVE SYSTEM			
#LIVER	(50)	(49)	(48)
NEOPLASTIC NODULE	2 (4%)	3 (6%)	10 (21%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A2. FEMALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HEPATOCELLULAR CARCINOMA			2 (4%)
#CARDIAC STOMACH	(50)	(49)	(47)
SQUAMOUS CELL PAPILLOMA			2 (4%)
URINARY SYSTEM			
#URINARY BLADDER	(47)	(46)	(47)
TRANSITIONAL-CELL PAPILLOMA		2 (4%)	
ENDOCRINE SYSTEM			
#PITUITARY	(44)	(45)	(46)
CARCINOMA,NOS			2 (4%)
CHROMOPHOBE ADENOMA	28 (64%)	19 (42%)	18 (39%)
CHROMOPHOBE CARCINOMA			1 (2%)
GANGLIONEUROBLASTOMA			1 (2%)
#ADRENAL	(49)	(48)	(48)
CORTICAL ADENOMA	1 (2%)	1 (2%)	
CORTICAL CARCINOMA			1 (2%)
PHEOCHROMOCYTOMA		1 (2%)	3 (6%)
GANGLIONEUROMA			1 (2%)
GANGLIONEUROBLASTOMA		1 (2%)	
#THYROID	(50)	(49)	(48)
C-CELL CARCINOMA	2 (4%)	3 (6%)	3 (6%)
#PARATHYROID	(40)	(38)	(35)
ADENOMA, NOS			1 (3%)
#PANCREATIC ISLETS	(49)	(49)	(48)
ISLET-CELL ADENOMA	1 (2%)		
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(50)	(49)	(49)
ADENOMA, NOS	2 (4%)	2 (4%)	
ADENOCARCINOMA, NOS		1 (2%)	
FIBROSARCOMA		1 (2%)	
FIBROADENOMA	7 (14%)	8 (16%)	7 (14%)
CYSTFIBROADENOMA	4 (8%)	2 (4%)	3 (6%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A2. FEMALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
*CLITORAL GLAND	(50)	(49)	(49)
CARCINOMA,NOS		1 (2%)	
ADENOMA, NOS		1 (2%)	
CYSTADENOMA, NOS	1 (2%)		
#UTERUS	(49)	(47)	(48)
ENDOMETRIAL STROMAL POLYP	18 (37%)	20 (43%)	11 (23%)
ENDOMETRIAL STROMAL SARCOMA		1 (2%)	
#OVARY	(49)	(47)	(48)
ADENOCARCINOMA, NOS		1 (2%)	
GRANULOSA-CELL TUMOR		1 (2%)	
NERVOUS SYSTEM			
#BRAIN	(50)	(49)	(48)
CHROMOPHOBE CARCINOMA, INVASIVE			1 (2%)
ASTROCYTOMA		1 (2%)	
#CEREBELLUM	(50)	(49)	(48)
ASTROCYTOMA		1 (2%)	
#MEDULLA OBLONGATA	(50)	(49)	(48)
ASTROCYTOMA			1 (2%)
SPECIAL SENSE ORGANS			
NONE			
MUSCULOSKELETAL SYSTEM			
NONE			
BODY CAVITIES			
*ABDOMINAL CAVITY	(50)	(49)	(49)
MESOTHELIOMA, NOS	1 (2%)		
ALL OTHER SYSTEMS			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE A2. FEMALE RATS: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ANIMAL DISPOSITION SUMMARY			
ANIMALS INITIALLY IN STUDY	50	49	50
NATURAL DEATH@	8	3	6
MORIBUND SACRIFICE	3	4	5
SCHEDULED SACRIFICE			
ACCIDENTALLY KILLED			1
TERMINAL SACRIFICE	39	42	38
ANIMAL MISSING			
TUMOR SUMMARY			
TOTAL ANIMALS WITH PRIMARY TUMORS*	44	41	38
TOTAL PRIMARY TUMORS	80	74	73
TOTAL ANIMALS WITH BENIGN TUMORS	38	37	28
TOTAL BENIGN TUMORS	58	54	46
TOTAL ANIMALS WITH MALIGNANT TUMORS	15	11	13
TOTAL MALIGNANT TUMORS	15	14	14
TOTAL ANIMALS WITH SECONDARY TUMORS#			2
TOTAL SECONDARY TUMORS			2
TOTAL ANIMALS WITH TUMORS UNCERTAIN-BENIGN OR MALIGNANT	7	6	13
TOTAL UNCERTAIN TUMORS	7	6	13
TOTAL ANIMALS WITH TUMORS UNCERTAIN-PRIMARY OR METASTATIC			
TOTAL UNCERTAIN TUMORS			

@ INCLUDES AUTOLYZED ANIMALS

* PRIMARY TUMORS: ALL TUMORS EXCEPT SECONDARY TUMORS
# SECONDARY TUMORS: METASTATIC TUMORS OR TUMORS INVASIVE INTO AN ADJACENT ORGAN

TABLE A3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

CONTROL

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	102	104	095	094	094	092	094	081	094	094	094	093	092	089	094	096	094	089	094	094	094	094	101	094	078
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROMA			X																						
FIBROSARCOMA													X												
NEURILEMOMA, MALIGNANT																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MESOTHELIOMA, METASTATIC																						X			
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LYMPH NODES	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
THYMUS	-	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+	+	+	-
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NEOPLASTIC NODULE																									
HEPATOCELLULAR CARCINOMA																									
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LEIOMYOSARCOMA																									
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	-	+	+	+
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
TUBULAR-CELL ADENOMA																									
URINARY BLADDER	+	+	+	+	+	-	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	-	+	+	+	+	-	+	+
ADENOMA, NOS																									
CHROMOPHOBE ADENOMA	X									X	X											X			
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PHEOCHROMOCYTOMA						X													X			X		X	
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C-CELL CARCINOMA																						X			
PARATHYROID	+	-	-	+	+	+	-	+	+	+	+	-	+	-	+	+	+	+	-	-	+	-	-	+	+
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ISLET-CELL ADENOMA									X																
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	+	+	+	+	+	+	N	+	+	+	+	N	+	+	N	+	+	N	N	+	N	N	+	+
FIBROADENOMA																							X		
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
INTERSTITIAL-CELL TUMOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X
PROSTATE	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CARCINOMA,NOS																						X			
ADENOMA, NOS																									
NERVOUS SYSTEM																									
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GRANULAR-CELL TUMOR, NOS								X																	
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MESOTHELIOMA, MALIGNANT																						X			
MALIGNANT LYMPHOMA, NOS																		X							
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																									
LEUKEMIA,NOS																					X				
LYMPHOCYTIC LEUKEMIA	X		X			X						X	X	X		X			X					X	

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A3. MALE RATS: TUMOR PATHOLOGY (CONTINUED) CONTROL

ANIMAL NUMBER	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049	050	TOTAL TISSUES TUMORS
WEEKS ON STUDY	104	081	104	104	096	095	081	104	091	097	041	104	041	104	089	041	041	104	041	104	092	091	084	104	103	
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	50*
FIBROMA																				X	X					3
FIBROSARCOMA							X																			2
NEURILEMOMA, MALIGNANT																							X			1
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
MESOTHELIOMA, METASTATIC																										1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	47
THYMUS	+	+	+	+	+	-	+	-	+	-	+	-	+	+	+	+	-	+	+	+	+	-	+	-	-	37
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	-	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	47
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
NEOPLASTIC NODULE	X					X								X	X			X								5
HEPATOCELLULAR CARCINOMA																								X		1
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
LEIOMYOSARCOMA																							X			1
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
TUBULAR-CELL ADENOMA	X																									1
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
ENDOCRINE SYSTEM																										
PITUITARY	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	44
ADENOMA, NOS										X																1
CHROMOPHOBE ADENOMA																						X				5
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
PHEOCHROMOCYTOMA	X			X																						6
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
C-CELL CARCINOMA										X															X	3
PARATHYROID	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	38
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
ISLET-CELL ADENOMA		X													X	X										4
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	N	+	+	+	+	N	+	+	+	N	+	+	+	N	N	+	+	N	+	N	N	N	+	+	50*
FIBROADENOMA								X																		2
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	50
INTERSTITIAL-CELL TUMOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	48
PROSTATE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
CARCINOMA,NOS																										1
ADENOMA, NOS					X																					1
NERVOUS SYSTEM																										
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GRANULAR-CELL TUMOR, NOS																										1
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
MESOTHELIOMA, MALIGNANT																										1
MALIGNANT LYMPHOMA, NOS																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE										X																1
LEUKEMIA,NOS				X									X										X			4
LYMPHOCYTIC LEUKEMIA	X				X	X		X	X					X	X		X			X				X		19

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

LOW DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	111	111	111	104	110	097	078	104	087	104	104	104	104	104	050	104	104	092	104	079	104	091	104	104	078
INTEGUMENTARY SYSTEM																									
SKIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	N	+	N	
SQUAMOUS CELL CARCINOMA				X																					
FIBROMA																									
CARCINOSARCOMA																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	N	+	N	
FIBROMA							X															X			
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
CARCINOSARCOMA, METASTATIC																									
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
HEMATOPOIETIC SYSTEM																									
BONE MARROW	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
LYMPH NODES	+	+	+	+	+	-	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	-	
ASTROCYTOMA, METASTATIC																									
THYMUS	-	+	+	-	-	-	-	+	+	+	+	+	+	+	-	-	+	-	-	+	-	+	+	+	
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
NEOPLASTIC NODULE			X											X			X		X						
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	+	N	N	N	N	N	N	N	N	N	N	N	N	
PANCREAS	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
SMALL INTESTINE	+	+	+	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	-	+	-	+	+	
PAPILLARY ADENOCARCINOMA																									
LARGE INTESTINE	+	+	+	+	+	+	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
TUBULAR-CELL ADENOMA																									
KIDNEY/PELVIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
TRANSITIONAL-CELL PAPILLOMA																									
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	+	+	+	+	+	
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+	+	-	
CARCINOMA,NOS																									
ADENOMA, NOS																									
CHROMOPHOBE ADENOMA					X																				
ADRENAL	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
PHEOCHROMOCYTOMA		X				X													X		X				
GANGLIONEUROBLASTOMA																									
THYROID	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
C-CELL CARCINOMA														X											
PARATHYROID	+	+	+	-	-	+	+	+	-	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+	
PANCREATIC ISLETS	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
ISLET-CELL ADENOMA										X															
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	+	+	N	N	+	+	+	N	+	N	+	+	+	N	+	+	N	+	N	N	N	N	+	N
ADENOMA, NOS																									
FIBROADENOMA																									
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
INTERSTITIAL-CELL TUMOR	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		
PROSTATE	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	-	
PAPILLARY ADENOMA																				X					
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
ADENOMA, NOS																				X					
NERVOUS SYSTEM																									
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
ASTROCYTOMA																									
BODY CAVITIES																									
TUNICA VAGINALIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
MESOTHELIOMA, NOS										X															
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
ANGIOSARCOMA																									
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																			X						
LYMPHOCYTIC LEUKEMIA																									

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A3. MALE RATS: TUMOR PATHOLOGY (CONTINUED) LOW DOSE

ANIMAL NUMBER / WEEKS ON STUDY	TOTAL TISSUES TUMORS
INTEGUMENTARY SYSTEM	
SKIN	50*
SQUAMOUS CELL CARCINOMA	1
FIBROMA	1
CARCINOSARCOMA	1
SUBCUTANEOUS TISSUE	50*
FIBROMA	2
RESPIRATORY SYSTEM	
LUNGS AND BRONCHI	50
CARCINOSARCOMA, METASTATIC	1
TRACHEA	50
HEMATOPOIETIC SYSTEM	
BONE MARROW	46
SPLEEN	50
LYMPH NODES	45
ASTROCYTOMA, METASTATIC	1
THYMUS	34
CIRCULATORY SYSTEM	
HEART	50
DIGESTIVE SYSTEM	
SALIVARY GLAND	49
LIVER	50
NEOPLASTIC NODULE	10
BILE DUCT	50
GALLBLADDER & COMMON BILE DUCT	50*
PANCREAS	48
ESOPHAGUS	50
STOMACH	50
SMALL INTESTINE	45
PAPILLARY ADENOCARCINOMA	1
LARGE INTESTINE	48
URINARY SYSTEM	
KIDNEY	50
TUBULAR-CELL ADENOMA	1
KIDNEY/PELVIS	50
TRANSITIONAL-CELL PAPILLOMA	1
URINARY BLADDER	46
ENDOCRINE SYSTEM	
PITUITARY	45
CARCINOMA,NOS	1
ADENOMA, NOS	1
CHROMOPHOBE ADENOMA	5
ADRENAL	49
PHEOCHROMOCYTOMA	6
GANGLIONEUROBLASTOMA	2
THYROID	49
C-CELL CARCINOMA	4
PARATHYROID	41
PANCREATIC ISLETS	48
ISLET-CELL ADENOMA	3
REPRODUCTIVE SYSTEM	
MAMMARY GLAND	50*
ADENOMA, NOS	1
FIBROADENOMA	1
TESTIS	50
INTERSTITIAL-CELL TUMOR	46
PROSTATE	42
PAPILLARY ADENOMA	2
PREPUTIAL/CLITORAL GLAND	50*
ADENOMA, NOS	1
NERVOUS SYSTEM	
BRAIN	50
ASTROCYTOMA	2
BODY CAVITIES	
TUNICA VAGINALIS	50*
MESOTHELIOMA, NOS	1
ALL OTHER SYSTEMS	
MULTIPLE ORGANS NOS	50*
ANGIOSARCOMA	1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE	1
LYMPHOCYTIC LEUKEMIA	1

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

HIGH DOSE

ANIMAL NUMBER	0216	0227	0228	0229	0230	0231	0232	0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247	0248	0249	0250	TOTAL
WEEKS ON STUDY	1 0 4	0 7 2	1 0 3	0 9 7	1 0 4	1 0 4	1 0 4	1 0 4	1 0 4	0 9 5	0 8 6	0 9 7	1 0 4	1 0 4	1 0 4	0 8 1	1 0 4	1 0 4	0 8 4	0 8 8	0 8 8	1 0 4	1 0 4	0 7 6	1 0 4	1 0 4	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	50
SQUAMOUS CELL CARCINOMA																										1
BASAL-CELL TUMOR																										1
FIBROMA			X	X	X			X	X			X														6
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
NASAL CAVITY	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	N	N	N	N	N	50*
SQUAMOUS CELL CARCINOMA, INVASIVE																				X						1
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
FIBROSARCOMA																								+		2
HEMANGIOSARCOMA																								X		1
LYMPH NODES	+	+	+	+	+	+	+	+	-	+	-	+	+	-	+	-	+	+	+	+	-	+	+	+	+	41
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																										1
THYMUS	+	-	-	-	-	+	+	+	+	+	-	+	-	+	-	+	+	+	+	+	+	+	+	+	+	35
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	+	+	46
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
NEOPLASTIC NODULE	X		X		X	X	X	X		X					X		X	X			X			X	X	30
HEPATOCELLULAR CARCINOMA																										2
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	46
ACINAR-CELL ADENOMA								X																		1
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SQUAMOUS CELL PAPILLOMA																										2
SMALL INTESTINE	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	+	+	+	-	+	47
ADENOCARCINOMA, NOS																										1
LEIOMYOMA																										1
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
ADENOMATOUS POLYP, NOS																										1
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	+	+	+	+	45
TRANSITIONAL-CELL PAPILLOMA																										1
ENDOCRINE SYSTEM																										
PITUITARY	+	-	+	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	-	+	43
CHROMOPHOBE ADENOMA																				X			X			4
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
CORTICAL ADENOMA																										1
PHEOCHROMOCYTOMA					X																					6
GANGLIONEUROBLASTOMA										X						X										2
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
C-CELL CARCINOMA																							X			2
PARATHYROID	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	42
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	46
ISLET-CELL CARCINOMA													X													1
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	N	N	N	+	+	+	+	N	N	N	N	N	N	N	+	+	+	+	N	N	N	N	+	+	50*
FIBROADENOMA																										1
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
INTERSTITIAL-CELL TUMOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	47
PROSTATE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
ADENOMA, NOS						X																				1
NERVOUS SYSTEM																										
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GRANULAR-CELL TUMOR, NOS																										1
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50*
LYMPHOCYTIC LEUKEMIA		X																								3
ORBITAL REGION																										
SQUAMOUS CELL CARCINOMA, INVASIVE																				X						1

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A3. MALE RATS: TUMOR PATHOLOGY (CONTINUED) HIGH DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	104	104	054	104	104	104	104	104	104	104	098	104	089	103	104	104	104	104	104	104	104	087	104	104	104
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N
SQUAMOUS CELL CARCINOMA																									
BASAL-CELL TUMOR					X																				
FIBROMA																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NASAL CAVITY	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SQUAMOUS CELL CARCINOMA, INVASIVE																									
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROSARCOMA																		X							
HEMANGIOSARCOMA											X														
LYMPH NODES	+	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+
MALIG.LYMPHOMA, HISTIOCYTIC TYPE														X											
THYMUS	+	-	+	+	+	+	+	-	+	+	+	-	-	+	-	+	+	-	+	+	+	-	-	+	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NEOPLASTIC NODULE	X				X	X	X	X	X	X	X	X		X	X			X		X	X		X	X	X
HEPATOCELLULAR CARCINOMA														X					X						
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
PANCREAS	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
ACINAR-CELL ADENOMA																									
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SQUAMOUS CELL PAPILLOMA				X	X																				
SMALL INTESTINE	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS																									
LEIOMYOMA																			X						
LARGE INTESTINE	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
ADENOMATOUS POLYP, NOS												X													
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+
TRANSITIONAL-CELL PAPILLOMA																			X						
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+
CHROMOPHOBE ADENOMA																		X		X					
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CORTICAL ADENOMA																					X				
PHEOCHROMOCYTOMA								X											X		X			X	X
GANGLIONEUROBLASTOMA																									
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C-CELL CARCINOMA																				X					
PARATHYROID	-	+	+	-	+	+	+	+	+	+	+	+	-	+	-	+	-	+	+	+	+	+	+	+	-
PANCREATIC ISLETS	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
ISLET-CELL CARCINOMA																									
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	N	+	+	+	+	+	+	+	+	N	N	+	+	N	N	+	+	+	+	+	+	N	+	N
FIBROADENOMA							X																		
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
INTERSTITIAL-CELL TUMOR	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
PROSTATE	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	+	+	+
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOMA, NOS																									
NERVOUS SYSTEM																									
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GRANULAR-CELL TUMOR, NOS								X																	
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
LYMPHOCYTIC LEUKEMIA													X									X			
ORBITAL REGION																									
SQUAMOUS CELL CARCINOMA, INVASIVE																									

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

CONTROL

ANIMAL NUMBER	00011	00012	00013	00014	00015	00016	00017	00018	00019	00110	00111	00112	00113	00114	00115	00116	00117	00118	00119	00120	00121	00122	00123	00124	00125
WEEKS ON STUDY	10041	10241	10041	10041	11041	10041	10041	10041	10041	10341	10441	10441	10441	10441	10441	10441	10441	10441	10441	10441	10441	09941	10141	10241	10041
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SQUAMOUS CELL CARCINOMA					X																				
SARCOMA, NOS																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LYMPH NODES	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYMUS	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	+	+	+	+	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NEOPLASTIC NODULE																									
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	-	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
CHROMOPHOBE ADENOMA	X		X	X	X		X			X					X			X		X	X		X	X		X
ADRENAL	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CORTICAL ADENOMA																									
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C-CELL CARCINOMA									X									X							
PARATHYROID	-	+	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ISLET-CELL ADENOMA																									
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	+	+	+	+	+	+	+	+	N	N	+	+	+	+	N	+	+	+	+	+	+	+	+	+
ADENOMA, NOS																				X					
FIBROADENOMA																									X
CYSTFIBROADENOMA			X	X	X																		X		
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CYSTADENOMA, NOS						X																			
UTERUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOMETRIAL STROMAL POLYP	X	X		X			X				X		X								X				X
OVARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
BODY CAVITIES																									
PERITONEUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MESOTHELIOMA, NOS																									
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE										X															
LYMPHOCYTIC LEUKEMIA		X	X											X								X			

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4. FEMALE RATS: TUMOR PATHOLOGY (CONTINUED) CONTROL

ANIMAL NUMBER	0216	0227	0228	0229	0230	0231	0232	0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247	0248	0249	0250	TOTAL
WEEKS ON STUDY	1 0 4	1 0 4	0 7 4	1 0 4	0 9 7	1 0 4	0 9 9	1 0 9	0 9 6	0 8 3	1 0 4	1 0 4	1 0 4	1 0 4	1 0 0	1 0 4	1 0 7	1 0 4	1 0 4	1 0 4	1 0 4	1 0 4	1 0 4	1 0 4	1 0 4	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	50	M
SQUAMOUS CELL CARCINOMA										X															1	
SARCOMA, NOS																									1	
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
TRACHEA	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48	
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	47	
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
THYMUS	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	-	-	-	+	+	+	+	+	43	
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
NEOPLASTIC NODULE						X		X																	2	
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50	M
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	49	
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	49	
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
URINARY BLADDER	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	47	
ENDOCRINE SYSTEM																										
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+	+	+	+	-	44	
CHROMOPHOBE ADENOMA	X	X			X		X		X		X	X	X	X		X			X	X	X	X		X	28	
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
CORTICAL ADENOMA																		X							1	
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
C-CELL CARCINOMA																									2	
PARATHYROID	-	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	-	+	+	-	+	+	+	+	40	
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	49	
ISLET-CELL ADENOMA																						X			1	
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	+	N	+	+	+	+	+	+	+	N	+	+	+	+	+	N	+	+	+	+	+	+	+	50	M
ADENOMA, NOS																			X						2	
FIBROADENOMA					X							X			X	X						X		X	7	
CYSTFIBROADENOMA																									4	
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50	M
CYSTADENOMA, NOS																									1	
UTERUS	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
ENDOMETRIAL STROMAL POLYP				X	X		X					X	X			X			X			X	X	X	18	
OVARY	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
BODY CAVITIES																										
PERITONEUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50	M
MESOTHELIOMA, NOS			X																						1	
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50	M
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									2	
LYMPHOCYTIC LEUKEMIA					X			X						X		X								X	9	

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

LOW DOSE

ANIMAL NUMBER	001	002	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	021	022	023	024	025	026
WEEKS ON STUDY	097	113	041	041	086	104	104	104	104	041	041	094	104	104	104	104	104	104	041	104	104	104	104	104
RESPIRATORY SYSTEM																								
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ALVEOLAR/BRONCHIOLAR CARCINOMA						X																		
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																								
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LYMPH NODES	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYMUS	+	+	+	+	+	+	+	-	+	+	+	+	+	+	-	+	-	-	+	+	+	+	+	+
CIRCULATORY SYSTEM																								
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																								
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NEOPLASTIC NODULE						X																		
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																								
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
TRANSITIONAL-CELL PAPILLOMA																								
ENDOCRINE SYSTEM																								
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+
CHROMOPHOBE ADENOMA	X	X					X			X	X	X		X	X			X	X	X				
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+
CORTICAL ADENOMA																			X					
PHEOCHROMOCYTOMA																			X					
GANGLIONEUROBLASTOMA																								
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C-CELL CARCINOMA													X											
PARATHYROID	+	+	-	+	+	-	+	+	+	+	-	+	+	-	+	+	-	+	+	+	-	+	+	+
REPRODUCTIVE SYSTEM																								
MAMMARY GLAND	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+
ADENOMA, NOS		X																						
ADENOCARCINOMA, NOS																								
FIBROSARCOMA																								
FIBROADENOMA		X			X			X			X				X									
CYSTFIBROADENOMA																					X			
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CARCINOMA,NOS																								
ADENOMA, NOS		X																						
UTERUS	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOMETRIAL STROMAL POLYP		X	X				X		X			X	X	X	X	X						X		X
ENDOMETRIAL STROMAL SARCOMA																								
OVARY	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS																								
GRANULOSA-CELL TUMOR											X													
NERVOUS SYSTEM																								
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ASTROCYTOMA																								
ALL OTHER SYSTEMS																								
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MALIG.LYMPHOMA, HISTIOCYTIC TYPE													X											
LEUKEMIA,NOS		X																						

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4. FEMALE RATS: TUMOR PATHOLOGY (CONTINUED) LOW DOSE

ANIMAL NUMBER	02701	02801	02901	03001	03101	03201	03301	03401	03501	03601	03701	03801	03901	04001	04101	04201	04301	04401	04501	04601	04701	04801	04901	05001	TOTAL TISSUES TUMORS
WEEKS ON STUDY	07704	10404	00404	00404	00404	00404	00404	00404	00404	00404	00404	00404	00404	00404	00101	00104	00104	09104	00404	00404	00404	00404	00404	00404	
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ALVEOLAR/BRONCHIOLAR CARCINOMA																									1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LYMPH NODES	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	46
THYMUS	-	+	+	+	+	+	-	+	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	40
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
NEOPLASTIC NODULE												X					X								3
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49*
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	46
TRANSITIONAL-CELL PAPILLOMA																					X	X			2
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	45
CHROMOPHOBE ADENOMA			X								X		X			X	X	X		X			X		19
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
CORTICAL ADENOMA																									1
PHEOCHROMOCYTOMA																									1
GANGLIONEUROBLASTOMA						X																			1
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
C-CELL CARCINOMA								X					X												3
PARATHYROID	+	+	+	+	+	+	-	+	+	+	+	-	+	+	-	+	+	+	+	+	-	+	-	+	38
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	N	49*
ADENOMA, NOS												X													2
ADENOCARCINOMA, NOS																X									1
FIBROSARCOMA															X										1
FIBROADENOMA	X							X													X				8
CYSTFIBROADENOMA															X										2
PREPUTIAL/CLITORAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49*
CARCINOMA,NOS									X																1
ADENOMA, NOS																									1
UTERUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	47
ENDOMETRIAL STROMAL POLYP				X	X		X		X	X	X	X				X					X				20
ENDOMETRIAL STROMAL SARCOMA																					X				1
OVARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	47
ADENOCARCINOMA, NOS																		X							1
GRANULOSA-CELL TUMOR																									1
NERVOUS SYSTEM																									
BRAIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ASTROCYTOMA								X							X										2
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49*
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																									1
LEUKEMIA,NOS																									1

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

HIGH DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	104	104	110	086	041	041	041	041	091	041	041	041	041	042	084	087	041	084	041	076	041	097	084	041	104
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	B	+	+	N	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROMA																									
FIBROSARCOMA																				X					
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CARCINOMA, NOS														X											
ALVEOLAR/BRONCHIOLAR CARCINOMA																									
CORTICAL CARCINOMA, METASTATIC																						X			
TRACHEA	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	B	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LYMPH NODES	+	+	B	+	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYMUS	+	+	B	+	+	+	-	+	-	+	+	+	+	-	+	+	+	+	+	+	+	-	+	+	-
CIRCULATORY SYSTEM																									
HEART	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NEOPLASTIC NODULE	X	X							X													X			
HEPATOCELLULAR CARCINOMA																									
BILE DUCT	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	N	N	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
PANCREAS	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	B	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+
SQUAMOUS CELL PAPILLOMA																									X
SMALL INTESTINE	+	+	B	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+
LARGE INTESTINE	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CARCINOMA, NOS														+											
CHROMOPHOBE ADENOMA						X						X	X	X		X	X		X			X			X
CHROMOPHOBE CARCINOMA																									
GANGLIONEUROBLASTOMA							X																		
ADRENAL	+	+	B	+	:	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CORTICAL CARCINOMA																						X			
PHEOCHROMOCYTOMA				X			X																		
GANGLIONEUROMA									X																
THYROID	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C-CELL CARCINOMA																			X	X					
PARATHYROID	+	+	B	+	-	+	-	-	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	+	-
ADENOMA, NOS																									
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	+	B	+	+	N	+	N	+	+	+	N	N	N	+	N	+	+	+	+	+	+	+	+	N
FIBROADENOMA		X		X			X					X										X			
CYSTFIBROADENOMA														X											
UTERUS	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOMETRIAL STROMAL POLYP	X					X					X						X		X						X
OVARY	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NERVOUS SYSTEM																									
BRAIN	+	+	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CHROMOPHOBE CARCINOMA, INVASIVE																									
ASTROCYTOMA																									

+: TISSUE EXAMINED MICROSCOPICALLY
~: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE A4. FEMALE RATS: TUMOR PATHOLOGY (CONTINUED) HIGH DOSE

ANIMAL NUMBER	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049	050	TOTAL
WEEKS ON STUDY	104	104	104	104	104	104	025	097	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49M
FIBROMA						X		X	X																	3
FIBROSARCOMA																										1
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
CARCINOMA, NOS																										1
ALVEOLAR/BRONCHIOLAR CARCINOMA																				X						1
CORTICAL CARCINOMA, METASTATIC																										1
TRACHEA	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
HEMATOPOIETIC SYSTEM																										
BONE MARROW	-	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46			
SPLEEN	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
LYMPH NODES	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46			
THYMUS	+	+	+	+	+	+	A	+	+	+	+	-	+	+	-	+	+	+	-	+	+	+	+	+	+	40
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
LIVER	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
NEOPLASTIC NODULE		X	X						X			X												X	X	10
HEPATOCELLULAR CARCINOMA																			X					X		2
BILE DUCT	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
GALLBLADDER & COMMON BILE DUCT	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49M			
PANCREAS	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
ESOPHAGUS	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
STOMACH	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47			
SQUAMOUS CELL PAPILLOMA												X														2
SMALL INTESTINE	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47			
LARGE INTESTINE	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
URINARY BLADDER	+	+	-	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47			
ENDOCRINE SYSTEM																										
PITUITARY	-	+	+	+	+	+	A	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	46			
CARCINOMA, NOS																	X									2
CHROMOPHOBE ADENOMA			X	X		X		X	X		X					X			X	X	X					18
CHROMOPHOBE CARCINOMA															X											1
GANGLIONEUROBLASTOMA																										1
ADRENAL	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
CORTICAL CARCINOMA																										1
PHEOCHROMOCYTOMA	X																									3
GANGLIONEUROMA																										1
THYROID	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48			
C-CELL CARCINOMA																		X								3
PARATHYROID	+	+	+	+	-	-	A	-	-	+	+	+	+	-	-	+	+	+	+	+	-	+	+	+		35
ADENOMA, NOS				X																						1
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	+	+	+	+	N	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+		49M
FIBROADENOMA											X			X												7
CYSTFIBROADENOMA															X					X						3
UTERUS	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		48
ENDOMETRIAL STROMAL POLYP			X			X			X										X	X						11
OVARY	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		48
NERVOUS SYSTEM																										
BRAIN	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		48
CHROMOPHOBE CARCINOMA, INVASIVE															X											1
ASTROCYTOMA																						X				1

M ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

.: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

APPENDIX B

Summary of the Incidence of Neoplasms
in Mice Fed Diets Containing C. I. Solvent Yellow 14

TABLE B1.

SUMMARY OF THE INCIDENCE OF NEOPLASMS IN MALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS MISSING	1		
ANIMALS NECROPSIED	49	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	49	50	50
INTEGUMENTARY SYSTEM			
*SUBCUT TISSUE	(49)	(50)	(50)
SARCOMA, NOS		1 (2%)	
FIBROSARCOMA		1 (2%)	2 (4%)
RHABDOMYOSARCOMA			1 (2%)
RESPIRATORY SYSTEM			
*NASAL CAVITY	(49)	(50)	(50)
OLFACTORY NEUROBLASTOMA		1 (2%)	
#LUNG	(49)	(50)	(50)
HEPATOCELLULAR CARCINOMA, METAST	5 (10%)	2 (4%)	3 (6%)
ALVEOLAR/BRONCHIOLAR ADENOMA	4 (8%)	6 (12%)	7 (14%)
ALVEOLAR/BRONCHIOLAR CARCINOMA	1 (2%)	1 (2%)	
FIBROSARCOMA, METASTATIC			1 (2%)
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(49)	(50)	(50)
MALIGNANT LYMPHOMA, NOS		1 (2%)	
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE		1 (2%)	1 (2%)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	3 (6%)	7 (14%)	5 (10%)
MALIGNANT LYMPHOMA, MIXED TYPE	1 (2%)		
GRANULOCYTIC LEUKEMIA			1 (2%)
#SPLEEN	(49)	(50)	(50)
MALIGNANT LYMPHOMA, NOS			1 (2%)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE		1 (2%)	
#LYMPH NODE	(41)	(46)	(43)
FIBROSARCOMA, INVASIVE			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B1. MALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#MESENTERIC L. NODE	(41)	(46)	(43)
FIBROSARCOMA		1 (2%)	
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE			1 (2%)
#RENAL LYMPH NODE	(41)	(46)	(43)
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE			1 (2%)
#PEYER'S PATCH	(48)	(49)	(45)
MALIGNANT LYMPHOMA, MIXED TYPE	1 (2%)		
CIRCULATORY SYSTEM			
*SUBCUT TISSUE	(49)	(50)	(50)
HEMANGIOMA	1 (2%)		
HEMANGIOSARCOMA		1 (2%)	
#SPLEEN	(49)	(50)	(50)
HEMANGIOSARCOMA			1 (2%)
#LIVER	(49)	(50)	(50)
HEMANGIOMA		1 (2%)	1 (2%)
HEMANGIOSARCOMA	1 (2%)	1 (2%)	1 (2%)
#KIDNEY/PELVIS	(48)	(50)	(50)
HEMANGIOMA		1 (2%)	
DIGESTIVE SYSTEM			
#LIVER	(49)	(50)	(50)
HEPATOCELLULAR ADENOMA	5 (10%)	3 (6%)	7 (14%)
HEPATOCELLULAR CARCINOMA	10 (20%)	9 (18%)	12 (24%)
#STOMACH	(47)	(48)	(49)
SQUAMOUS CELL CARCINOMA			2 (4%)
#CARDIAC STOMACH	(47)	(48)	(49)
SQUAMOUS CELL PAPILLOMA			1 (2%)
#JEJUNUM	(48)	(49)	(45)
ADENOCARCINOMA, NOS	1 (2%)	1 (2%)	
URINARY SYSTEM			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B1. MALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ENDOCRINE SYSTEM			
#PITUITARY	(38)	(37)	(41)
CHROMOPHOBE ADENOMA			2 (5%)
#ADRENAL	(48)	(50)	(49)
CORTICAL ADENOMA	2 (4%)		
PHEOCHROMOCYTOMA			1 (2%)
#THYROID	(49)	(48)	(50)
FOLLICULAR-CELL ADENOMA		1 (2%)	1 (2%)
FOLLICULAR-CELL CARCINOMA			1 (2%)
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(49)	(50)	(50)
ADENOCARCINOMA, NOS			1 (2%)
#TESTIS	(48)	(50)	(49)
INTERSTITIAL-CELL TUMOR		1 (2%)	
NERVOUS SYSTEM			
NONE			
SPECIAL SENSE ORGANS			
*EYE/LACRIMAL GLAND	(49)	(50)	(50)
ADENOMA, NOS	1 (2%)		2 (4%)
MUSCULOSKELETAL SYSTEM			
NONE			
BODY CAVITIES			
*MEDIASTINUM	(49)	(50)	(50)
HEPATOCELLULAR CARCINOMA, METAST			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B1. MALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ALL OTHER SYSTEMS			
*MULTIPLE ORGANS	(49)	(50)	(50)
ADENOCARCINOMA, NOS, METASTATIC			1 (2%)
SARCOMA, NOS, METASTATIC		1 (2%)	
FIBROSARCOMA, INVASIVE		1 (2%)	
ANIMAL DISPOSITION SUMMARY			
ANIMALS INITIALLY IN STUDY	50	50	50
NATURAL DEATHə	4	8	10
MORIBUND SACRIFICE	1		1
SCHEDULED SACRIFICE			
ACCIDENTALLY KILLED			
TERMINAL SACRIFICE	44	42	39
ANIMAL MISSING	1		
ə INCLUDES AUTOLYZED ANIMALS			
TUMOR SUMMARY			
TOTAL ANIMALS WITH PRIMARY TUMORS*	24	30	37
TOTAL PRIMARY TUMORS	31	40	53
TOTAL ANIMALS WITH BENIGN TUMORS	13	12	20
TOTAL BENIGN TUMORS	13	13	22
TOTAL ANIMALS WITH MALIGNANT TUMORS	15	23	25
TOTAL MALIGNANT TUMORS	18	27	31
TOTAL ANIMALS WITH SECONDARY TUMORS#	5	4	5
TOTAL SECONDARY TUMORS	5	4	7
TOTAL ANIMALS WITH TUMORS UNCERTAIN-BENIGN OR MALIGNANT			
TOTAL UNCERTAIN TUMORS			
TOTAL ANIMALS WITH TUMORS UNCERTAIN-PRIMARY OR METASTATIC			
TOTAL UNCERTAIN TUMORS			

* PRIMARY TUMORS: ALL TUMORS EXCEPT SECONDARY TUMORS
# SECONDARY TUMORS: METASTATIC TUMORS OR TUMORS INVASIVE INTO AN ADJACENT ORGAN

TABLE B2.

SUMMARY OF THE INCIDENCE OF NEOPLASMS IN FEMALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS NECROPSIED	50	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	50	50
INTEGUMENTARY SYSTEM			
*SKIN	(50)	(50)	(50)
BASAL-CELL CARCINOMA	1 (2%)		
*SUBCUT TISSUE	(50)	(50)	(50)
SARCOMA, NOS	1 (2%)		2 (4%)
FIBROSARCOMA		2 (4%)	
LIPOSARCOMA			1 (2%)
RESPIRATORY SYSTEM			
#LUNG	(50)	(50)	(49)
ALVEOLAR/BRONCHIOLAR ADENOMA	2 (4%)	5 (10%)	3 (6%)
ALVEOLAR/BRONCHIOLAR CARCINOMA	1 (2%)	1 (2%)	1 (2%)
SARCOMA, NOS, METASTATIC			1 (2%)
LIPOSARCOMA, METASTATIC			1 (2%)
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
MALIGNANT LYMPHOMA, NOS	1 (2%)	1 (2%)	
MALIG.LYMPHOMA, UNDIFFER-TYPE		1 (2%)	3 (6%)
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE	2 (4%)		1 (2%)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	4 (8%)	14 (28%)	9 (18%)
MALIGNANT LYMPHOMA, MIXED TYPE	1 (2%)	4 (8%)	1 (2%)
LEUKEMIA,NOS	1 (2%)		
LYMPHOCYTIC LEUKEMIA	2 (4%)		
*SKIN	(50)	(50)	(50)
MAST-CELL TUMOR		1 (2%)	
#SPLEEN	(50)	(49)	(49)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	1 (2%)		1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B2. FEMALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
MALIGNANT LYMPHOMA, MIXED TYPE		1 (2%)	
#LYMPH NODE	(45)	(45)	(46)
LIPOSARCOMA, METASTATIC			1 (2%)
#MANDIBULAR L. NODE	(45)	(45)	(46)
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE		1 (2%)	1 (2%)
#LIVER	(50)	(50)	(50)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE			1 (2%)
#PEYER'S PATCH	(48)	(49)	(48)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE		1 (2%)	
#UTERUS	(49)	(47)	(49)
MALIG.LYMPHOMA, HISTIOCYTIC TYPE			1 (2%)
CIRCULATORY SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
HEMANGIOSARCOMA		1 (2%)	
#BONE MARROW	(47)	(48)	(49)
HEMANGIOMA			1 (2%)
#SPLEEN	(50)	(49)	(49)
HEMANGIOSARCOMA	1 (2%)		1 (2%)
*MEDIASTINAL ARTERY	(50)	(50)	(50)
SARCOMA, NOS, METASTATIC		1 (2%)	
DIGESTIVE SYSTEM			
#LIVER	(50)	(50)	(50)
HEPATOCELLULAR ADENOMA		1 (2%)	2 (4%)
HEPATOCELLULAR CARCINOMA	2 (4%)	3 (6%)	4 (8%)
#ESOPHAGUS	(50)	(47)	(49)
SQUAMOUS CELL PAPILLOMA		1 (2%)	
#STOMACH	(49)	(49)	(49)
SQUAMOUS CELL PAPILLOMA			1 (2%)
#CARDIAC STOMACH	(49)	(49)	(49)
SQUAMOUS CELL PAPILLOMA			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B2. FEMALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#JEJUNUM	(48)	(49)	(48)
ADENOCARCINOMA, NOS			1 (2%)
URINARY SYSTEM			
NONE			
ENDOCRINE SYSTEM			
#PITUITARY	(43)	(38)	(46)
CHROMOPHOBE ADENOMA	1 (2%)		2 (4%)
CHROMOPHOBE CARCINOMA	1 (2%)		
#ADRENAL	(49)	(48)	(48)
PHEOCHROMOCYTOMA			1 (2%)
#THYROID	(49)	(47)	(47)
ADENOMA, NOS	1 (2%)		
FOLLICULAR-CELL ADENOMA		3 (6%)	1 (2%)
#PANCREATIC ISLETS	(47)	(48)	(49)
ISLET-CELL ADENOMA		2 (4%)	1 (2%)
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(50)	(50)	(50)
ADENOCARCINOMA, NOS	1 (2%)	1 (2%)	
#UTERUS	(49)	(47)	(49)
FIBROMA	1 (2%)		
LEIOMYOMA		1 (2%)	1 (2%)
ENDOMETRIAL STROMAL POLYP		1 (2%)	1 (2%)
#ENDOMETRIAL GLAND	(49)	(47)	(49)
ADENOCARCINOMA, NOS	1 (2%)		
#OVARY	(46)	(46)	(48)
PAPILLARY ADENOMA	1 (2%)		
PAPILLARY CYSTADENOMA, NOS	1 (2%)		
CHORIOCARCINOMA		1 (2%)	
NERVOUS SYSTEM			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B2. FEMALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
SPECIAL SENSE ORGANS			
*EYE	(50)	(50)	(50)
MALIGNANT MELANOMA	1 (2%)		
*EYE/LACRIMAL GLAND	(50)	(50)	(50)
ADENOMA, NOS	1 (2%)		
*EXTERNAL EAR	(50)	(50)	(50)
SARCOMA, NOS			1 (2%)
MUSCULOSKELETAL SYSTEM			
*VERTEBRAL COLUMN	(50)	(50)	(50)
SARCOMA, NOS, INVASIVE			1 (2%)
*RIB	(50)	(50)	(50)
SARCOMA, NOS, INVASIVE		1 (2%)	
BODY CAVITIES			
*ABDOMINAL CAVITY	(50)	(50)	(50)
SARCOMA, NOS	1 (2%)		
ALL OTHER SYSTEMS			
*MULTIPLE ORGANS	(50)	(50)	(50)
ADENOCARCINOMA, NOS, METASTATIC	1 (2%)		
SARCOMA, NOS, METASTATIC	1 (2%)		1 (2%)
FIBROSARCOMA, METASTATIC		1 (2%)	
THORAX			
SARCOMA, NOS		1	
LIPOSARCOMA, METASTATIC	1		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE B2. FEMALE MICE: NEOPLASMS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ANIMAL DISPOSITION SUMMARY			
ANIMALS INITIALLY IN STUDY	50	50	50
NATURAL DEATH@	14	7	11
MORIBUND SACRIFICE		2	2
SCHEDULED SACRIFICE			
ACCIDENTALLY KILLED			
TERMINAL SACRIFICE	36	41	37
ANIMAL MISSING			
TUMOR SUMMARY			
TOTAL ANIMALS WITH PRIMARY TUMORS*	27	34	36
TOTAL PRIMARY TUMORS	31	48	44
TOTAL ANIMALS WITH BENIGN TUMORS	8	11	14
TOTAL BENIGN TUMORS	8	14	15
TOTAL ANIMALS WITH MALIGNANT TUMORS	21	29	25
TOTAL MALIGNANT TUMORS	23	33	29
TOTAL ANIMALS WITH SECONDARY TUMORS#	3	2	3
TOTAL SECONDARY TUMORS	3	3	5
TOTAL ANIMALS WITH TUMORS UNCERTAIN-BENIGN OR MALIGNANT		1	
TOTAL UNCERTAIN TUMORS		1	
TOTAL ANIMALS WITH TUMORS UNCERTAIN-PRIMARY OR METASTATIC			
TOTAL UNCERTAIN TUMORS			

@ INCLUDES AUTOLYZED ANIMALS

* PRIMARY TUMORS: ALL TUMORS EXCEPT SECONDARY TUMORS
# SECONDARY TUMORS: METASTATIC TUMORS OR TUMORS INVASIVE INTO AN ADJACENT ORGAN

TABLE B3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

CONTROL

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMANGIOMA																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR CARCINOMA, METASTA															X										
ALVEOLAR/BRONCHIOLAR ADENOMA												X					X					X			
ALVEOLAR/BRONCHIOLAR CARCINOMA					X																				
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LYMPH NODES	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	-	-	+
THYMUS	+	+	-	+	-	+	+	-	+	+	-	+	+	+	+	+	+	-	+	+	-	+	+	-	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR ADENOMA				X		X	X																		
HEPATOCELLULAR CARCINOMA		X									X	X			X										
HEMANGIOSARCOMA												X													
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PANCREAS	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS				X																					
MALIGNANT LYMPHOMA, MIXED TYPE									X																
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
CORTICAL ADENOMA																						X			
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PARATHYROID	+	+	+	-	-	-	-	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	-	+	+
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PROSTATE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPECIAL SENSE ORGANS																									
LACRIMAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOMA, NOS																									
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MALIG.LYMPHOMA, HISTIOCYTIC TYPE											X	X													
MALIGNANT LYMPHOMA, MIXED TYPE																	X								

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B3. MALE MICE: TUMOR PATHOLOGY (CONTINUED) CONTROL

ANIMAL NUMBER	02 26	02 27	02 28	02 29	03 30	03 31	03 32	03 33	03 34	03 35	03 36	03 37	03 38	03 39	04 01	04 11	04 12	04 13	04 14	04 15	04 16	04 17	04 18	04 19	05 10	TOTAL
WEEKS ON STUDY	00 08	01 51	01 11	11 05	10 51	10 51	10 51	01 51	06 00	10 51	01 51	01 51	10 51	10 51	10 51	07 71	01 51	10 51	10 51	10 51	09 71	10 51	10 51	10 51	10 51	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49M
HEMANGIOMA																	X									1
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEPATOCELLULAR CARCINOMA, METASTA															X	X					X				X	5
ALVEOLAR/BRONCHIOLAR ADENOMA																X										4
ALVEOLAR/BRONCHIOLAR CARCINOMA																										1
TRACHEA	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
SPLEEN	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LYMPH NODES	+	+	+	+	+	+	+	M	+	+	-	+	+	+	+	+	-	-	+	+	+	+	+	+	+	41
THYMUS	-	-	+	-	-	+	+	M	A	+	+	+	+	+	+	-	+	+	+	+	-	-	+	+	-	33
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
LIVER	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEPATOCELLULAR ADENOMA												X												X		5
HEPATOCELLULAR CARCINOMA															X	X				X	X	X			X	10
HEMANGIOSARCOMA																										1
BILE DUCT	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
GALLBLADDER & COMMON BILE DUCT	N	+	N	+	+	+	+	M	N	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	49M
PANCREAS	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
ESOPHAGUS	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
STOMACH	-	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
SMALL INTESTINE	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
ADENOCARCINOMA, NOS																										1
MALIGNANT LYMPHOMA, MIXED TYPE																										1
LARGE INTESTINE	-	+	-	+	+	+	+	M	A	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	45
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	48
URINARY BLADDER	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ENDOCRINE SYSTEM																										
PITUITARY	-	+	+	+	+	+	+	M	+	-	+	+	-	+	-	-	+	+	+	+	-	+	+	-	+	38
ADRENAL	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
CORTICAL ADENOMA															X											2
THYROID	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
PARATHYROID	+	+	-	+	+	+	+	M	A	+	+	+	-	-	+	-	-	+	+	-	+	+	+	-	-	33
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	N	+	N	N	N	N	N	M	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49M
TESTIS	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
PROSTATE	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SPECIAL SENSE ORGANS																										
LACRIMAL GLAND	N	N	N	N	N	N	N	M	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49M
ADENOMA, NOS											X															1
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	M	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	49M
MALIG.LYMPHOMA, HISTIOCYTIC TYPE										X																3
MALIGNANT LYMPHOMA, MIXED TYPE																										1

M ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

LOW DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	105	105	105	105	102	105	105	105	105	105	105	105	101	105	105	105	105	105	096	105	105	105	098	105	105
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SARCOMA, NOS			X																						
FIBROSARCOMA		X																							
HEMANGIOSARCOMA																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR CARCINOMA, METASTA																								X	
ALVEOLAR/BRONCHIOLAR ADENOMA		X						X																	
ALVEOLAR/BRONCHIOLAR CARCINOMA																									
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NASAL CAVITY	M	M	M	+	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
OLFACTORY NEUROBLASTOMA				X																					
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																									
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROSARCOMA																									
THYMUS	-	-	-	-	-	+	+	+	+	+	+	+	-	-	+	+	+	-	-	+	-	-	+	-	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR ADENOMA																X									
HEPATOCELLULAR CARCINOMA																		X				X	X		X
HEMANGIOMA																						X			
HEMANGIOSARCOMA								X																	
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
STOMACH	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS																					X				
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
KIDNEY/PELVIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMANGIOMA									X																
URINARY BLADDER	+	+	-	+	-	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	-	+	+	-	+	+	+	+	+	+	+	+	-	+	+	-	-	+	-	+	+	+	+	-
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FOLLICULAR-CELL ADENOMA						X																			
PARATHYROID	+	-	+	+	+	+	+	+	+	+	-	-	-	+	-	+	+	-	+	-	+	+	-	-	-
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
INTERSTITIAL-CELL TUMOR											X														
PROSTATE	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SARCOMA, NOS, METASTATIC																		X							
FIBROSARCOMA, INVASIVE		X																							
MALIGNANT LYMPHOMA, NOS																									
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																	X								
MALIG.LYMPHOMA, HISTIOCYTIC TYPE					X		X						X						X						

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B3. MALE MICE: TUMOR PATHOLOGY (CONTINUED) LOW DOSE

ANIMAL NUMBER	02 06	02 07	02 08	02 09	03 01	03 12	03 13	03 14	03 15	03 16	03 17	03 18	03 19	04 01	04 11	04 12	04 13	04 14	04 15	04 16	04 17	04 18	04 19	05 10	TOTAL TISSUES TUMORS
WEEKS ON STUDY	105	105	105	105	105	105	105	105	105	105	086	105	105	105	105	105	105	105	105	105	105	105	103	103	
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	50 M
SARCOMA, NOS																									1
FIBROSARCOMA																									1
HEMANGIOSARCOMA																									1
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR CARCINOMA, METASTA										X															2
ALVEOLAR/BRONCHIOLAR ADENOMA	X						X												X				X		6
ALVEOLAR/BRONCHIOLAR CARCINOMA											X														1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
NASAL CAVITY	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	50 M
OLFACTORY NEUROBLASTOMA																									1
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																						X			1
LYMPH NODES	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	-	46
FIBROSARCOMA																						X			1
THYMUS	+	+	+	+	+	+	+	+	-	-	+	-	+	+	+	-	+	+	+	+	-	+	+	-	31
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	48
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR ADENOMA			X																				X		3
HEPATOCELLULAR CARCINOMA			X							X		X				X					X				9
HEMANGIOMA																									1
HEMANGIOSARCOMA																									1
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	N	+	N 50 M
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ADENOCARCINOMA, NOS																									1
LARGE INTESTINE	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
KIDNEY/PELVIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEMANGIOMA																									1
URINARY BLADDER	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
ENDOCRINE SYSTEM																									
PITUITARY	+	-	+	+	+	-	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	+	-	-	37
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	48
FOLLICULAR-CELL ADENOMA																									1
PARATHYROID	+	+	+	-	-	+	+	-	+	+	-	-	+	-	+	-	+	+	-	+	+	+	-	-	29
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50 M
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
INTERSTITIAL-CELL TUMOR																									1
PROSTATE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	47
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50 M
SARCOMA, NOS, METASTATIC																									1
FIBROSARCOMA, INVASIVE																									1
MALIGNANT LYMPHOMA, NOS																	X								1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE			X						X			X													3

M ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B3.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN MALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

HIGH DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	075	105	105	105	105	105	101	069	105	081	105	105	105	105	105	105	105	071	091	105	105	105	098	105	105
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROSARCOMA																			X						
RHABDOMYOSARCOMA								X																	
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR CARCINOMA, METASTA		X																	X						
ALVEOLAR/BRONCHIOLAR ADENOMA											X					X						X			
FIBROSARCOMA, METASTATIC																									
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMANGIOSARCOMA		X																							
MALIGNANT LYMPHOMA, NOS																						X			
LYMPH NODES	+	+	-	+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROSARCOMA, INVASIVE																			X						
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									
THYMUS	-	+	-	-	+	+	+	-	+	-	+	+	-	+	-	-	+	+	-	-	+	+	-	+	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR ADENOMA														X						X					X
HEPATOCELLULAR CARCINOMA		X													X				X					X	
HEMANGIOMA																									
HEMANGIOSARCOMA																				X					
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SQUAMOUS CELL PAPILLOMA					X																				
SQUAMOUS CELL CARCINOMA											X								X						
SMALL INTESTINE	-	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
LARGE INTESTINE	-	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	-	+	+
CHROMOPHOBE ADENOMA																									
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+
PHEOCHROMOCYTOMA					X																				
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FOLLICULAR-CELL ADENOMA																						X			
FOLLICULAR-CELL CARCINOMA																									
PARATHYROID	-	-	-	-	+	+	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	+	-
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOCARCINOMA, NOS																									
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
PROSTATE	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
SPECIAL SENSE ORGANS																									
LACRIMAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOMA, NOS															X		X								
BODY CAVITIES																									
MEDIASTINUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
HEPATOCELLULAR CARCINOMA, METASTA																									
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOCARCINOMA, NOS, METASTATIC																									
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE										X															
MALIG.LYMPHOMA, HISTIOCYTIC TYPE					X		X																X		
GRANULOCYTIC LEUKEMIA								X																	

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B3. MALE MICE: TUMOR PATHOLOGY (CONTINUED) HIGH DOSE

ANIMAL NUMBER	02616	02718	02819	03109	03110	03111	03202	03301	03405	03506	03617	03805	03904	04001	04112	04123	04134	04145	04156	04167	04178	04189	04199	04510	TOTAL
WEEKS ON STUDY	10051	10151	10151	10151	09041	10151	10151	10151	10151	10151	10151	10151	10151	03041	10151	10151	10151	10151	10151	08151	10133	10151	09111	10150	TISSUES TUMORS
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	50M
FIBROSARCOMA							X																		2
RHABDOMYOSARCOMA																									1
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR CARCINOMA, METASTA					X																				3
ALVEOLAR/BRONCHIOLAR ADENOMA		X	X															X						X	7
FIBROSARCOMA, METASTATIC							X																		1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEMANGIOSARCOMA																									1
MALIGNANT LYMPHOMA, NOS																									1
LYMPH NODES	+	+	+	-	-	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	43
FIBROSARCOMA, INVASIVE																									1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE														X	X										2
THYMUS	+	-	-	-	-	-	-	+	-	-	+	-	+	A	+	+	+	+	+	+	-	+	-	+	27
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	49
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR ADENOMA										X	X						X							X	7
HEPATOCELLULAR CARCINOMA					X	X						X			X				X	X		X	X		12
HEMANGIOMA	X																								1
HEMANGIOSARCOMA																									1
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	N	+	+	+	+	+	+	+	N	+	+	N	+	+	+	+	+	+	+	50M
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SQUAMOUS CELL PAPILLOMA																									1
SQUAMOUS CELL CARCINOMA																									2
SMALL INTESTINE	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	45
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	47
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	49
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	-	+	-	+	-	A	-	-	+	+	+	+	+	+	+	+	41
CHROMOPHOBE ADENOMA												X									X				2
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
PHEOCHROMOCYTOMA																									1
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
FOLLICULAR-CELL ADENOMA														X											1
FOLLICULAR-CELL CARCINOMA																									1
PARATHYROID	+	+	+	-	-	-	+	-	-	+	-	+	-	A	-	-	-	+	-	-	-	+	-	-	15
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	N	N	N	N	+	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
ADENOCARCINOMA, NOS					X																				1
TESTIS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
PROSTATE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SPECIAL SENSE ORGANS																									
LACRIMAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
ADENOMA, NOS																									2
BODY CAVITIES																									
MEDIASTINUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
HEPATOCELLULAR CARCINOMA, METASTA					X																				1
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
ADENOCARCINOMA, NOS, METASTATIC					X																				1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE													X								X				5
GRANULOCYTIC LEUKEMIA																									1

M ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

CONTROL

ANIMAL NUMBER	0011	0012	0013	0014	0015	0016	0017	0018	0019	0110	0111	0112	0113	0114	0115	0116	0117	0118	0119	0120	0121	0122	0123	0124	0125
WEEKS ON STUDY	105	105	080	096	095	051	051	051	051	033	051	090	090	051	051	093	051	092	092	051	051	051	092	051	051
INTEGUMENTARY SYSTEM																									
SKIN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
BASAL-CELL CARCINOMA																							X		
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SARCOMA, NOS				X																					
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ALVEOLAR/BRONCHIOLAR ADENOMA																		X							
ALVEOLAR/BRONCHIOLAR CARCINOMA																									
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMANGIOSARCOMA																								X	
MALIG.LYMPHOMA, HISTIOCYTIC TYPE															X										
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-
THYMUS	+	+	-	-	+	+	+	+	+	+	+	+	-	+	+	-	+	-	-	+	+	+	-	+	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	+	-
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR CARCINOMA																									X
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
CHROMOPHOBE ADENOMA																									
CHROMOPHOBE CARCINOMA																									
ADRENAL	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
ADENOMA, NOS																									
PARATHYROID	-	+	+	+	+	-	+	-	+	-	-	+	+	+	-	-	-	+	-	+	-	-	+	+	+
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	N	N	+	+	+	+	+	+	+	+	N	N	+	+	+	N	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS							X																		
UTERUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS																									
FIBROMA																									
OVARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PAPILLARY ADENOMA																									
PAPILLARY CYSTADENOMA, NOS					X																				
SPECIAL SENSE ORGANS																									
EYE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
MALIGNANT MELANOMA	X																								
LACRIMAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOMA, NOS	X																								
BODY CAVITIES																									
PLEURA	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
LIPOSARCOMA, METASTATIC																									
PERITONEUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SARCOMA, NOS																									
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ADENOCARCINOMA, NOS, METASTATIC																									
SARCOMA, NOS, METASTATIC				X																					
MALIGNANT LYMPHOMA, NOS													X												
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																			X						
MALIG.LYMPHOMA, HISTIOCYTIC TYPE			X					X			X														
MALIGNANT LYMPHOMA, MIXED TYPE												X													
LEUKEMIA,NOS																							X		
LYMPHOCYTIC LEUKEMIA																									

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4. FEMALE MICE: TUMOR PATHOLOGY (CONTINUED) CONTROL

ANIMAL NUMBER	02616	02717	02818	02919	03010	03111	03212	03313	03446	03525	03616	03707	03818	03909	04010	04111	04212	04313	04414	04515	04646	04747	04848	04949	05010	TOTAL
WEEKS ON STUDY	10151	10051	10151	10151	10151	10151	10151	10151	10801	10887	10133	10666	10101	10105	10151	10151	10151	10151	10151	10176	10153	10151	10151	10151	10151	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SKIN	+	+	+	+	+	+	+	+	N	N	+	N	N	+	+	+	+	+	+	N	+	+	+	+	+	50
BASAL-CELL CARCINOMA																										1
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	N	N	+	N	N	+	+	+	+	+	+	N	+	+	+	+	+	50
SARCOMA, NOS																										1
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
ALVEOLAR/BRONCHIOLAR ADENOMA														X												2
ALVEOLAR/BRONCHIOLAR CARCINOMA												X														1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEMANGIOSARCOMA																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																										1
LYMPH NODES	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	45
THYMUS	-	-	+	+	+	+	+	+	-	+	-	-	-	+	+	+	+	+	+	-	+	+	+	+	+	36
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	45
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR CARCINOMA								X																		2
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	N	+	+	N	+	+	+	+	+	+	+	N	+	+	+	+	+	50
PANCREAS	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	47
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	49
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	48
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	47
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
URINARY BLADDER	+	+	+	+	+	+	+	+	+	-	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	46
ENDOCRINE SYSTEM																										
PITUITARY	+	-	+	+	+	+	+	+	+	-	+	-	-	+	+	+	-	+	+	+	-	+	+	+	+	43
CHROMOPHOBE ADENOMA								X																		1
CHROMOPHOBE CARCINOMA											X															1
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ADENOMA, NOS															X											1
PARATHYROID	-	-	+	+	+	+	-	+	+	-	+	-	-	+	+	+	+	-	+	-	+	+	+	+	-	30
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	N	N	N	+	+	+	+	N	N	N	N	N	+	+	+	+	+	+	+	N	N	+	+		50
ADENOCARCINOMA, NOS																										1
UTERUS	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ADENOCARCINOMA, NOS																		X								1
FIBROMA				X																						1
OVARY	+	-	+	+	+	+	-	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	46
PAPILLARY ADENOMA															X											1
PAPILLARY CYSTADENOMA, NOS																										1
SPECIAL SENSE ORGANS																										
EYE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
MALIGNANT MELANOMA																										1
LACRIMAL GLAND	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
ADENOMA, NOS																										1
BODY CAVITIES																										
PLEURA	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
LIPOSARCOMA, METASTATIC									X																	1
PERITONEUM	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
SARCOMA, NOS																				X						1
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
ADENOCARCINOMA, NOS, METASTATIC																			X							1
SARCOMA, NOS, METASTATIC																										1
MALIGNANT LYMPHOMA, NOS																										1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE														X												2
MALIG.LYMPHOMA, HISTIOCYTIC TYPE											X															4
MALIGNANT LYMPHOMA, MIXED TYPE																										1
LEUKEMIA,NOS																										1
LYMPHOCYTIC LEUKEMIA										X											X					2

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

LOW DOSE

ANIMAL NUMBER	0 0 1 1	0 0 2 1	0 0 3 1	0 0 4 1	0 0 5 1	0 0 6 1	0 0 7 1	0 0 8 1	0 0 9 1	0 1 0 1	0 1 1 1	0 1 2 1	0 1 3 1	0 1 4 1	0 1 5 1	0 1 6 1	0 1 7 1	0 1 8 1	0 1 9 1	0 2 0 1	0 2 1 1	0 2 2 1	0 2 3 1	0 2 4 1	0 2 5 1
WEEKS ON STUDY	1 0 5	1 0 5	1 0 5	0 8 9	1 0 5	0 9 5	0 7 6	1 0 5	1 0 5	1 0 5	1 0 5	1 0 5	0 0 4	0 0 5	1 0 5	1 0 5	0 7 3	1 0 5	1 0 5	1 0 5	1 0 5	1 0 5	1 0 5	1 0 5	1 0 5
INTEGUMENTARY SYSTEM																									
SKIN	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MAST-CELL TUMOR																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FIBROSARCOMA													X	X											
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ALVEOLAR/BRONCHIOLAR ADENOMA					X		X												X						X
ALVEOLAR/BRONCHIOLAR CARCINOMA																									
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MALIGNANT LYMPHOMA, MIXED TYPE																									
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									
THYMUS	+	+	+	-	+	+	-	-	-	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
BLOOD VESSELS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SARCOMA, NOS, METASTATIC																	X								
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
HEPATOCELLULAR ADENOMA												X									X				
HEPATOCELLULAR CARCINOMA																									
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
SQUAMOUS CELL PAPILLOMA																		X							
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SMALL INTESTINE	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
MALIG.LYMPHOMA, HISTIOCYTIC TYPE														X											
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY BLADDER	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	-	+	-	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+	-	+	
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
FOLLICULAR-CELL ADENOMA																		X		X					
PARATHYROID	-	-	-	-	+	+	-	+	-	+	+	+	-	-	+	-	-	+	-	+	-	+	-	+	+
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
ISLET-CELL ADENOMA																				X		X			
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	N	+	N	N	N	N	N	N	+	+	+	+	+	+	+	N	N	+	+	+	+	N	+	+
ADENOCARCINOMA, NOS																								X	
UTERUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
LEIOMYOMA																			X						
ENDOMETRIAL STROMAL POLYP	X																								
OVARY	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CHORIOCARCINOMA																									
MUSCULOSKELETAL SYSTEM																									
BONE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SARCOMA, NOS, INVASIVE																	X								
BODY CAVITIES																									
PLEURA	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SARCOMA, NOS																	X								
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
FIBROSARCOMA, METASTATIC														X											
HEMANGIOSARCOMA																									
MALIGNANT LYMPHOMA, NOS															X										
MALIG.LYMPHOMA, UNDIFFER-TYPE			X																						
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	X	X		X			X			X						X	X			X		X			X
MALIGNANT LYMPHOMA, MIXED TYPE																									

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4. FEMALE MICE: TUMOR PATHOLOGY (CONTINUED) LOW DOSE

ANIMAL NUMBER	02 06	02 07	02 08	02 09	03 09	03 11	03 12	03 13	03 14	03 15	03 15	03 16	03 17	03 18	03 19	04 01	04 01	04 02	04 03	04 04	04 05	04 06	04 07	04 08	04 09	05 00	TOTAL TISSUES TUMORS
WEEKS ON STUDY	08 5	10 5	11 5	10 5	09 7	10 5	11 5	10 5	10 5	10 5	09 2	10 5	10 5	10 5	10 5	10 5	10 5	02 8	10 5	10 5	10 5	10 5	10 3	10 5	10 5	10 5	
INTEGUMENTARY SYSTEM																											
SKIN	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	N	+	+	+	+	+	50
MAST-CELL TUMOR																X										1
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	N	+	+	+	+	+	50
FIBROSARCOMA																										2
RESPIRATORY SYSTEM																											
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
ALVEOLAR/BRONCHIOLAR ADENOMA				X			X																			5
ALVEOLAR/BRONCHIOLAR CARCINOMA																										1
TRACHEA	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMATOPOIETIC SYSTEM																											
BONE MARROW	+	+	+	-	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SPLEEN	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
MALIGNANT LYMPHOMA, MIXED TYPE																					X					1
LYMPH NODES	-	+	+	+	+	-	+	+	+	+	A	+	+	+	+	+	+	+	-	-	+	+	+	+	+	45
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE					X																					1
THYMUS	-	+	+	+	-	+	+	+	+	+	A	+	+	+	+	-	+	-	+	-	+	+	+	+	+	38
CIRCULATORY SYSTEM																											
HEART	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
BLOOD VESSELS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
SARCOMA, NOS, METASTATIC																										1
DIGESTIVE SYSTEM																											
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR ADENOMA																							X			1
HEPATOCELLULAR CARCINOMA																									X	3
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	N	+	+	+	+	+	+	+	50
PANCREAS	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
ESOPHAGUS	+	+	+	+	+	+	+	+	+	-	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
SQUAMOUS CELL PAPILLOMA																										1
STOMACH	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SMALL INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																										1
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
URINARY SYSTEM																											
KIDNEY	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	-	+	+	+	+	+	+	+	+	+	46
ENDOCRINE SYSTEM																											
PITUITARY	-	+	+	+	+	+	+	+	-	+	A	-	+	+	+	-	+	-	+	+	+	+	+	+	+	38
ADRENAL	-	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
THYROID	+	+	+	+	+	+	+	+	+	-	A	+	+	+	+	+	+	-	+	+	+	+	+	+	+	47
FOLLICULAR-CELL ADENOMA																								X		3
PARATHYROID	+	-	+	+	+	-	+	-	+	-	A	-	-	-	+	+	+	-	+	-	+	+	-	+	+	26
PANCREATIC ISLETS	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
ISLET-CELL ADENOMA																										2
REPRODUCTIVE SYSTEM																											
MAMMARY GLAND	N	+	+	+	+	N	+	+	+	+	N	+	+	N	N	+	+	+	+	N	+	+	+	+	+	50
ADENOCARCINOMA, NOS																										1
UTERUS	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	-	+	+	+	+	+	+	+	+	+	47
LEIOMYOMA																										1
ENDOMETRIAL STROMAL POLYP																										1
OVARY	+	+	+	+	+	+	+	+	+	+	A	+	-	+	+	-	+	+	+	+	+	+	+	+	+	46
CHORIOCARCINOMA																		X								1
MUSCULOSKELETAL SYSTEM																											
BONE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
SARCOMA, NOS, INVASIVE																										1
BODY CAVITIES																											
PLEURA	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
SARCOMA, NOS																										1
ALL OTHER SYSTEMS																											
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50
FIBROSARCOMA, METASTATIC																										1
HEMANGIOSARCOMA					X																					1
MALIGNANT LYMPHOMA, NOS																										1
MALIG.LYMPHOMA, UNDIFFER-TYPE																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE	X		X	X																					X	14
MALIGNANT LYMPHOMA, MIXED TYPE									X							X							X			4

* ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION
: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4.

INDIVIDUAL ANIMAL TUMOR PATHOLOGY IN FEMALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

HIGH DOSE

ANIMAL NUMBER	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025
WEEKS ON STUDY	105	105	105	105	105	105	086	101	093	105	105	105	105	105	104	105	105	087	101	105	105	103	082	105	
INTEGUMENTARY SYSTEM																									
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	
SARCOMA, NOS																									
LIPOSARCOMA																									
RESPIRATORY SYSTEM																									
LUNGS AND BRONCHI	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
ALVEOLAR/BRONCHIOLAR ADENOMA					X																				
ALVEOLAR/BRONCHIOLAR CARCINOMA															X										
SARCOMA, NOS, METASTATIC																									
LIPOSARCOMA, METASTATIC																									
TRACHEA	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
HEMATOPOIETIC SYSTEM																									
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	
HEMANGIOMA																									
SPLEEN	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
HEMANGIOSARCOMA		X																							
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																									
LYMPH NODES	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	
LIPOSARCOMA, METASTATIC																									
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																									
THYMUS	+	-	+	-	+	+	+	A	+	+	+	+	+	+	+	-	+	+	-	+	-	-	-	-	+
CIRCULATORY SYSTEM																									
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
DIGESTIVE SYSTEM																									
SALIVARY GLAND	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
HEPATOCELLULAR ADENOMA							X																		
HEPATOCELLULAR CARCINOMA									X								X								
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																									
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	N	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+
PANCREAS	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ESOPHAGUS	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
STOMACH	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
SQUAMOUS CELL PAPILLOMA															X										
SMALL INTESTINE	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ADENOCARCINOMA, NOS																									
LARGE INTESTINE	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
URINARY SYSTEM																									
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	
URINARY BLADDER	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	
ENDOCRINE SYSTEM																									
PITUITARY	+	+	+	+	+	+	-	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
CHROMOPHOBE ADENOMA											X														
ADRENAL	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
PHEOCHROMOCYTOMA																									
THYROID	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
FOLLICULAR-CELL ADENOMA																X									
PARATHYROID	-	+	-	+	-	+	+	A	-	-	+	+	+	-	-	+	+	+	-	+	-	+	+	-	
PANCREATIC ISLETS	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
ISLET-CELL ADENOMA																									
REPRODUCTIVE SYSTEM																									
MAMMARY GLAND	+	+	+	+	N	+	+	N	+	N	+	+	+	+	+	+	N	+	N	+	+	+	+	N	N
UTERUS	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
LEIOMYOMA																				+					
ENDOMETRIAL STROMAL POLYP															X					X					
MALIG.LYMPHOMA, HISTIOCYTIC TYPE						X																			
OVARY	+	+	-	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
SPECIAL SENSE ORGANS																									
EAR	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
SARCOMA, NOS																									
MUSCULOSKELETAL SYSTEM																									
BONE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
SARCOMA, NOS, INVASIVE																									
ALL OTHER SYSTEMS																									
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
SARCOMA, NOS, METASTATIC																									
MALIG.LYMPHOMA, UNDIFFER-TYPE		X																				X			
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE						X																			
MALIG.LYMPHOMA, HISTIOCYTIC TYPE										X						X			X				X		
MALIGNANT LYMPHOMA, MIXED TYPE												X													

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

TABLE B4. FEMALE MICE: TUMOR PATHOLOGY (CONTINUED) HIGH DOSE

ANIMAL NUMBER	02 26	02 27	02 28	02 29	03 30	03 31	03 32	03 33	03 34	03 35	03 36	03 37	03 38	03 39	04 00	04 01	04 02	04 13	04 44	04 45	04 46	04 47	04 48	04 49	05 50	TOTAL
WEEKS ON STUDY	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 5	11 00 2	11 00 5	11 00 3	11 00 5	11 00 5	11 01 9	11 00 5	11 00 5	11 00 5	11 00 5	11 00 9	11 00 9	11 00 5	11 00 7	TISSUES TUMORS
INTEGUMENTARY SYSTEM																										
SUBCUTANEOUS TISSUE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50M
SARCOMA, NOS											X												X			2
LIPOSARCOMA																									X	1
RESPIRATORY SYSTEM																										
LUNGS AND BRONCHI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ALVEOLAR/BRONCHIOLAR ADENOMA																	X							X		3
ALVEOLAR/BRONCHIOLAR CARCINOMA																										1
SARCOMA, NOS, METASTATIC											X															1
LIPOSARCOMA, METASTATIC																									X	1
TRACHEA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	48
HEMATOPOIETIC SYSTEM																										
BONE MARROW	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMANGIOMA																			X							1
SPLEEN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
HEMANGIOSARCOMA																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																					X					1
LYMPH NODES	+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
LIPOSARCOMA, METASTATIC																									X	1
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE							X																			1
THYMUS	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	+	+	-	-	+	+	-	-	+	-	34
CIRCULATORY SYSTEM																										
HEART	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
DIGESTIVE SYSTEM																										
SALIVARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
HEPATOCELLULAR ADENOMA																X										2
HEPATOCELLULAR CARCINOMA					X														X							4
MALIG.LYMPHOMA, HISTIOCYTIC TYPE											X															1
BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
GALLBLADDER & COMMON BILE DUCT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50M
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
STOMACH	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
SQUAMOUS CELL PAPILLOMA										X																2
SMALL INTESTINE	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
ADENOCARCINOMA, NOS				X																						1
LARGE INTESTINE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	48
URINARY SYSTEM																										
KIDNEY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
URINARY BLADDER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	46
ENDOCRINE SYSTEM																										
PITUITARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	46
CHROMOPHOBE ADENOMA			X																							2
ADRENAL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
PHEOCHROMOCYTOMA					X																					1
THYROID	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	47
FOLLICULAR-CELL ADENOMA																										1
PARATHYROID	-	+	-	+	-	-	-	-	-	-	+	+	-	+	+	+	-	+	-	+	-	-	-	-	+	24
PANCREATIC ISLETS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
ISLET-CELL ADENOMA	X																									1
REPRODUCTIVE SYSTEM																										
MAMMARY GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	N	+	+	+	N	+	N	N	50M
UTERUS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
LEIOMYOMA																										1
ENDOMETRIAL STROMAL POLYP																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE																										1
OVARY	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
SPECIAL SENSE ORGANS																										
EAR	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	+	N	N	N	50M
SARCOMA, NOS																						X				1
MUSCULOSKELETAL SYSTEM																										
BONE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
SARCOMA, NOS, INVASIVE																						X				1
ALL OTHER SYSTEMS																										
MULTIPLE ORGANS NOS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	50M
SARCOMA, NOS, METASTATIC										X												X				1
MALIG.LYMPHOMA, UNDIFFER-TYPE																										5
MALIG.LYMPHOMA, LYMPHOCYTIC TYPE																										1
MALIG.LYMPHOMA, HISTIOCYTIC TYPE													X	X	X			X					X			9
MALIGNANT LYMPHOMA, MIXED TYPE																										1

M ANIMALS NECROPSIED

+: TISSUE EXAMINED MICROSCOPICALLY
-: REQUIRED TISSUE NOT EXAMINED MICROSCOPICALLY
X: TUMOR INCIDENCE
N: NECROPSY, NO AUTOLYSIS, NO MICROSCOPIC EXAMINATION

: NO TISSUE INFORMATION SUBMITTED
C: NECROPSY, NO HISTOLOGY DUE TO PROTOCOL
A: AUTOLYSIS
M: ANIMAL MISSING
B: NO NECROPSY PERFORMED

APPENDIX C

Summary of the Incidence of Nonneoplastic Lesions
in Rats Fed Diets Containing C. I. Solvent Yellow 14

TABLE C1.

SUMMARY OF THE INCIDENCE OF NONNEOPLASTIC LESIONS IN MALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS NECROPSIED	50	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	50	50
INTEGUMENTARY SYSTEM			
*SKIN	(50)	(50)	(50)
EPIDERMAL INCLUSION CYST		1 (2%)	
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
FIBROSIS, DIFFUSE			1 (2%)
*SUBCUT TISSUE	(50)	(50)	(50)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
GRANULOMA, FOREIGN BODY	1 (2%)		
RESPIRATORY SYSTEM			
#TRACHEA	(49)	(50)	(50)
INFLAMMATION, DIFFUSE	1 (2%)		
INFLAMMATION, ACUTE/CHRONIC		1 (2%)	
#LUNG/BRONCHUS	(50)	(50)	(50)
INFLAMMATION, ACUTE/CHRONIC			1 (2%)
HYPERPLASIA, EPITHELIAL			1 (2%)
#LUNG/BRONCHIOLE	(50)	(50)	(50)
HYPERPLASIA, NOS	1 (2%)	3 (6%)	1 (2%)
#LUNG	(50)	(50)	(50)
CONGESTION, NOS			1 (2%)
CONGESTION, PASSIVE		2 (4%)	1 (2%)
EDEMA, NOS		3 (6%)	
HEMORRHAGE			1 (2%)
INFLAMMATION, INTERSTITIAL	1 (2%)	1 (2%)	3 (6%)
PNEUMONIA, ASPIRATION		1 (2%)	
PERIVASCULAR CUFFING			1 (2%)
HYPERPLASIA, ALVEOLAR EPITHELIUM	1 (2%)	3 (6%)	1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HEMATOPOIETIC SYSTEM			
#BONE MARROW	(49)	(46)	(50)
CONGESTION, NOS			1 (2%)
HYPERPLASIA, GRANULOCYTIC		1 (2%)	2 (4%)
HYPERPLASIA, RETICULUM CELL	1 (2%)		
HYPOPLASIA, ERYTHROID			1 (2%)
#SPLEEN	(50)	(50)	(50)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		1 (2%)
FIBROSIS, FOCAL		1 (2%)	
FIBROSIS, MULTIFOCAL			1 (2%)
FIBROSIS, DIFFUSE			2 (4%)
LYMPHOID DEPLETION	2 (4%)	3 (6%)	3 (6%)
HYPERPLASIA, RETICULUM CELL			1 (2%)
HYPERPLASIA, LYMPHOID	1 (2%)		
HEMATOPOIESIS		1 (2%)	1 (2%)
#SPLENIC RED PULP	(50)	(50)	(50)
HEMATOPOIESIS	1 (2%)	5 (10%)	4 (8%)
#LYMPH NODE	(47)	(45)	(41)
HEMORRHAGE		1 (2%)	
INFLAMMATION, DIFFUSE		1 (2%)	
INFLAMMATION, GRANULOMATOUS			1 (2%)
PLASMACYTOSIS	1 (2%)		
HEMATOPOIESIS	1 (2%)		
#MANDIBULAR L. NODE	(47)	(45)	(41)
HEMORRHAGE	1 (2%)	1 (2%)	
INFLAMMATION, GRANULOMATOUS			1 (2%)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	1 (2%)
PLASMACYTOSIS		2 (4%)	3 (7%)
HYPERPLASIA, LYMPHOID			1 (2%)
#CERVICAL LYMPH NODE	(47)	(45)	(41)
PIGMENTATION, NOS			1 (2%)
LYMPHOID DEPLETION			1 (2%)
#PANCREATIC L.NODE	(47)	(45)	(41)
INFLAMMATION, FOCAL GRANULOMATOU		2 (4%)	
#MESENTERIC L. NODE	(47)	(45)	(41)
INFLAMMATION, GRANULOMATOUS			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)	7 (16%)	4 (10%)
LYMPHOID DEPLETION	1 (2%)		1 (2%)
#RENAL LYMPH NODE	(47)	(45)	(41)
INFLAMMATION, GRANULOMATOUS			1 (2%)
PIGMENTATION, NOS	1 (2%)		
LYMPHOID DEPLETION			1 (2%)
#TRACHEAL SUBMUCOSA	(49)	(50)	(50)
HYPERPLASIA, LYMPHOID			1 (2%)
#LUNG/BRONCHUS	(50)	(50)	(50)
HYPERPLASIA, LYMPHOID			1 (2%)
#LUNG/BRONCHIOLE	(50)	(50)	(50)
HYPERPLASIA, LYMPHOID	1 (2%)		
#LUNG	(50)	(50)	(50)
HYPERPLASIA, LYMPHOID	12 (24%)	28 (56%)	23 (46%)
#PEYER'S PATCH	(47)	(45)	(47)
HYPERPLASIA, LYMPHOID	1 (2%)		
#THYMUS	(37)	(34)	(35)
CONGESTION, NOS		1 (3%)	
CONGESTION, PASSIVE		1 (3%)	
HEMORRHAGE	1 (3%)		
PIGMENTATION, NOS		1 (3%)	
ATROPHY, DIFFUSE	1 (3%)		
LYMPHOID DEPLETION		1 (3%)	
CIRCULATORY SYSTEM			
*MEDIASTINUM	(50)	(50)	(50)
THROMBUS, MURAL		1 (2%)	
#LYMPH NODE	(47)	(45)	(41)
LYMPHANGIECTASIS			1 (2%)
#MANDIBULAR L. NODE	(47)	(45)	(41)
LYMPHANGIECTASIS			1 (2%)
#HEART	(50)	(50)	(50)
MINERALIZATION			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
DEGENERATION, NOS	43 (86%)	44 (88%)	41 (82%)
PIGMENTATION, NOS		1 (2%)	
#LEFT ATRIUM	(50)	(50)	(50)
THROMBOSIS, NOS		1 (2%)	
THROMBUS, ORGANIZED		1 (2%)	
THROMBUS, MURAL	2 (4%)		1 (2%)
#MYOCARDIUM	(50)	(50)	(50)
MINERALIZATION		1 (2%)	
DEGENERATION, NOS			1 (2%)
#CARDIAC VALVE	(50)	(50)	(50)
FIBROSIS, MULTIFOCAL	3 (6%)	8 (16%)	11 (22%)
*BLOOD VESSEL	(50)	(50)	(50)
CONGESTION, NOS			1 (2%)
*AORTA	(50)	(50)	(50)
PERIARTERITIS		1 (2%)	
*PANCREATIC ARTERY	(50)	(50)	(50)
INFLAMMATION, CHRONIC			1 (2%)
*MESENTERIC ARTERY	(50)	(50)	(50)
THROMBOSIS, NOS		1 (2%)	
#PANCREAS	(50)	(48)	(46)
PERIARTERITIS	1 (2%)	1 (2%)	2 (4%)
#KIDNEY	(50)	(50)	(50)
ARTERIOSCLEROSIS, NOS			1 (2%)
#PROSTATE	(48)	(42)	(47)
PERIARTERITIS	1 (2%)		
DIGESTIVE SYSTEM			
#LIVER	(50)	(50)	(50)
CONGESTION, PASSIVE	1 (2%)	1 (2%)	
CONGESTION, CHRONIC PASSIVE		2 (4%)	
INFLAMMATION, ACUTE FOCAL		1 (2%)	
INFLAMMATION, FOCAL GRANULOMATOU	2 (4%)	6 (12%)	6 (12%)
DEGENERATION, NOS	1 (2%)		
DEGENERATION, CYSTIC		1 (2%)	1 (2%)
BASOPHILIC CYTO CHANGE	12 (24%)	27 (54%)	20 (40%)
FOCAL CELLULAR CHANGE	1 (2%)		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
EOSINOPHILIC CYTO CHANGE			1 (2%)
CLEAR-CELL CHANGE	6 (12%)	10 (20%)	17 (34%)
CYTOLOGIC DEGENERATION	1 (2%)		
ANGIECTASIS			2 (4%)
#LIVER/CENTRILOBULAR	(50)	(50)	(50)
CONGESTION, NOS	1 (2%)		
DEGENERATION, NOS			1 (2%)
NECROSIS, NOS	1 (2%)	1 (2%)	
NECROSIS, FOCAL	5 (10%)	4 (8%)	1 (2%)
NECROSIS, DIFFUSE	7 (14%)	2 (4%)	
#LIVER/HEPATOCYTES	(50)	(50)	(50)
DEGENERATION, NOS			1 (2%)
#BILE DUCT	(50)	(50)	(50)
CYST, NOS			1 (2%)
HYPERPLASIA, NOS	2 (4%)		1 (2%)
HYPERPLASIA, FOCAL	35 (70%)	36 (72%)	39 (78%)
#PANCREAS	(50)	(48)	(46)
DILATATION/DUCTS	1 (2%)	1 (2%)	1 (2%)
INFLAMMATION, ACUTE/CHRONIC			1 (2%)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
FIBROSIS, DIFFUSE			1 (2%)
CYTOPLASMIC VACUOLIZATION		1 (2%)	
#PANCREATIC ACINUS	(50)	(48)	(46)
NECROSIS, NOS		1 (2%)	
ATROPHY, FOCAL	15 (30%)	19 (40%)	22 (48%)
ATROPHY, DIFFUSE	1 (2%)	2 (4%)	2 (4%)
#STOMACH	(50)	(50)	(49)
MINERALIZATION			1 (2%)
INFLAMMATION, CHRONIC			1 (2%)
#GASTRIC MUCOSA	(50)	(50)	(49)
CYST, NOS	1 (2%)		
CONGESTION, NOS		1 (2%)	
#GASTRIC SUBMUCOSA	(50)	(50)	(49)
CYST, NOS	1 (2%)		1 (2%)
#GASTRIC SEROSA	(50)	(50)	(49)
MINERALIZATION			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#CARDIAC STOMACH	(50)	(50)	(49)
ULCER, FOCAL		1 (2%)	
ULCER, ACUTE	1 (2%)	1 (2%)	1 (2%)
HYPERPLASIA, NOS			1 (2%)
HYPERPLASIA, FOCAL			1 (2%)
HYPERPLASIA, BASAL CELL		1 (2%)	1 (2%)
#GASTRIC FUNDUS	(50)	(50)	(49)
EMBRYONAL REST			1 (2%)
ULCER, NOS	2 (4%)	1 (2%)	
#JEJUNUM	(47)	(45)	(47)
INFLAMMATION, ACUTE/CHRONIC	1 (2%)		
#ILEAL MUCOUS MEMBRAN	(47)	(45)	(47)
ULCER, FOCAL	1 (2%)		
#COLON	(50)	(48)	(47)
NEMATODIASIS		1 (2%)	
URINARY SYSTEM			
#KIDNEY	(50)	(50)	(50)
NEPHROPATHY	47 (94%)	46 (92%)	49 (98%)
NEPHROSIS, NOS		1 (2%)	
PIGMENTATION, NOS	1 (2%)	1 (2%)	
#KIDNEY/CORTEX	(50)	(50)	(50)
CYST, NOS			1 (2%)
MULTIPLE CYSTS		1 (2%)	
#KIDNEY/TUBULE	(50)	(50)	(50)
CYST, NOS	1 (2%)	1 (2%)	2 (4%)
PIGMENTATION, NOS	1 (2%)		
REGENERATION, NOS		1 (2%)	
#KIDNEY/PELVIS	(50)	(50)	(50)
HYPERPLASIA, EPITHELIAL	1 (2%)		
ENDOCRINE SYSTEM			
#PITUITARY	(44)	(45)	(43)
HEMORRHAGE	1 (2%)	1 (2%)	

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HYPERPLASIA, CHROMOPHOBE-CELL	4 (9%)	9 (20%)	9 (21%)
ANGIECTASIS		1 (2%)	
#PITUITARY ACIDOPHIL	(44)	(45)	(43)
HYPERPLASIA, NOS		1 (2%)	
#ADRENAL	(50)	(49)	(50)
NECROSIS, HEMORRHAGIC		1 (2%)	
METAMORPHOSIS FATTY	1 (2%)	1 (2%)	
#ADRENAL CORTEX	(50)	(49)	(50)
HEMORRHAGIC CYST			1 (2%)
METAMORPHOSIS FATTY	3 (6%)	3 (6%)	2 (4%)
HYPERPLASIA, NODULAR	2 (4%)	1 (2%)	2 (4%)
HYPERPLASIA, FOCAL	2 (4%)		
#ZONA RETICULARIS	(50)	(49)	(50)
CYTOPLASMIC VACUOLIZATION		1 (2%)	
#ADRENAL MEDULLA	(50)	(49)	(50)
HYPERPLASIA, NODULAR	2 (4%)	1 (2%)	
HYPERPLASIA, NOS			1 (2%)
HYPERPLASIA, FOCAL	1 (2%)	2 (4%)	1 (2%)
#THYROID	(50)	(49)	(50)
FOLLICULAR CYST, NOS			2 (4%)
HEMORRHAGE		1 (2%)	
HYPERPLASIA, C-CELL	33 (66%)	30 (61%)	33 (66%)
HYPERPLASIA, FOLLICULAR-CELL			2 (4%)
#THYROID FOLLICLE	(50)	(49)	(50)
MULTILOCULAR CYST	1 (2%)		
MULTIPLE CYSTS		1 (2%)	
#PARATHYROID	(38)	(41)	(42)
HYPERPLASIA, NODULAR	1 (3%)		
HYPERPLASIA, NOS			1 (2%)
HYPERPLASIA, FOCAL	1 (3%)		
HYPERPLASIA, DIFFUSE		1 (2%)	
#PANCREATIC ISLETS	(50)	(48)	(46)
HYPERPLASIA, FOCAL		3 (6%)	
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(50)	(50)	(50)
DILATATION/DUCTS	12 (24%)	4 (8%)	4 (8%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
CYST, NOS			1 (2%)
HYPERPLASIA, CYSTIC	1 (2%)		
*MAMMARY ACINUS	(50)	(50)	(50)
DILATATION, NOS	6 (12%)	1 (2%)	3 (6%)
HYPERPLASIA, FOCAL		2 (4%)	1 (2%)
*PREPUTIAL GLAND	(50)	(50)	(50)
CYST, NOS		2 (4%)	
#PROSTATE	(48)	(42)	(47)
CONGESTION, NOS			1 (2%)
INFLAMMATION, FOCAL		1 (2%)	
INFLAMMATION, MULTIFOCAL	4 (8%)	9 (21%)	4 (9%)
INFLAMMATION ACUTE AND CHRONIC	1 (2%)		
INFLAMMATION, ACUTE/CHRONIC	1 (2%)	1 (2%)	
INFLAMMATION, CHRONIC	1 (2%)		
HYPERPLASIA, EPITHELIAL		1 (2%)	
*SEMINAL VESICLE	(50)	(50)	(50)
INFLAMMATION, ACUTE/CHRONIC		2 (4%)	
#TESTIS	(50)	(50)	(50)
MINERALIZATION	1 (2%)		
HEMATOMA, NOS		2 (4%)	
DEGENERATION, NOS			1 (2%)
ATROPHY, NOS	2 (4%)	4 (8%)	7 (14%)
ATROPHY, FOCAL		1 (2%)	
ATROPHY, DIFFUSE		1 (2%)	
HYPERPLASIA, INTERSTITIAL CELL	1 (2%)	8 (16%)	1 (2%)
#TESTIS/TUBULE	(50)	(50)	(50)
DEGENERATION, NOS	1 (2%)		
ATROPHY, DIFFUSE		1 (2%)	
*EPIDIDYMIS	(50)	(50)	(50)
MINERALIZATION		1 (2%)	
NERVOUS SYSTEM			
#BRAIN/MENINGES	(50)	(50)	(50)
HEMORRHAGE	1 (2%)		
#CEREBRUM	(50)	(50)	(50)
MINERALIZATION			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HEMORRHAGE	2 (4%)		
ATROPHY, PRESSURE		1 (2%)	
#BRAIN	(50)	(50)	(50)
HYDROCEPHALUS, NOS		1 (2%)	1 (2%)
NECROSIS, HEMORRHAGIC	1 (2%)		1 (2%)
ATROPHY, PRESSURE		1 (2%)	1 (2%)
#CEREBELLUM	(50)	(50)	(50)
HEMORRHAGE	2 (4%)		
#CEREBELLAR WHITE MAT	(50)	(50)	(50)
CYTOPLASMIC VACUOLIZATION		1 (2%)	
*SPINAL CORD	(50)	(50)	(50)
INFLAMMATION, NOS		1 (2%)	
DEGENERATION, WALLERIAN		1 (2%)	
SPECIAL SENSE ORGANS			
*EYE/RETINA	(50)	(50)	(50)
DEGENERATION, NOS			1 (2%)
*EYE/CRYSTALLINE LENS	(50)	(50)	(50)
MINERALIZATION			1 (2%)
MUSCULOSKELETAL SYSTEM			
*RIB	(50)	(50)	(50)
OSTEOPOROSIS		1 (2%)	
BODY CAVITIES			
*ABDOMINAL CAVITY	(50)	(50)	(50)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	
*PLEURA	(50)	(50)	(50)
INFLAMMATION, CHRONIC	1 (2%)		
*MESENTERY	(50)	(50)	(50)
STEATITIS	1 (2%)		
INFLAMMATION, GRANULOMATOUS			3 (6%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C1. MALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
INFLAMMATION, FOCAL GRANULOMATOU		3 (6%)	4 (8%)
NECROSIS, FAT	1 (2%)		1 (2%)
ALL OTHER SYSTEMS			
CRANIOBUCCAL POUCH			
EMBRYONAL REST		1	1
SPECIAL MORPHOLOGY SUMMARY			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2.

SUMMARY OF THE INCIDENCE OF NONNEOPLASTIC LESIONS IN FEMALE RATS FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	49	50
ANIMALS NECROPSIED	50	49	49
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	49	48
INTEGUMENTARY SYSTEM			
*SKIN	(50)	(49)	(49)
ACANTHOSIS		1 (2%)	
*SUBCUT TISSUE	(50)	(49)	(49)
EDEMA, NOS			1 (2%)
INFLAMMATION, NECRO GRAN	1 (2%)		
RESPIRATORY SYSTEM			
#TRACHEA	(48)	(49)	(48)
DILATATION/DUCTS			1 (2%)
#LUNG/BRONCHIOLE	(50)	(49)	(48)
INFLAMMATION, CHRONIC FOCAL			1 (2%)
HYPERPLASIA, NOS	1 (2%)	1 (2%)	
#LUNG	(50)	(49)	(48)
CONGESTION, NOS	1 (2%)	1 (2%)	
EDEMA, NOS	1 (2%)		2 (4%)
INFLAMMATION, INTERSTITIAL	1 (2%)	2 (4%)	2 (4%)
PNEUMONIA INTERSTITIAL CHRONIC			1 (2%)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
PERIVASCULAR CUFFING			1 (2%)
HEMOSIDEROSIS	1 (2%)		
HYPERPLASIA, ALVEOLAR EPITHELIUM	1 (2%)	1 (2%)	
HEMATOPOIETIC SYSTEM			
#BONE MARROW	(47)	(49)	(46)
HYPOPLASIA, NOS		2 (4%)	1 (2%)
DEPLETION			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HYPERPLASIA, DIFFUSE		1 (2%)	
HYPERPLASIA, GRANULOCYTIC	1 (2%)	4 (8%)	
HYPERPLASIA, RETICULUM CELL	4 (9%)	4 (8%)	6 (13%)
#SPLEEN	(50)	(49)	(48)
CONGESTION, NOS			1 (2%)
FIBROSIS, FOCAL		1 (2%)	2 (4%)
FIBROSIS, DIFFUSE			1 (2%)
PIGMENTATION, NOS			1 (2%)
ATROPHY, FOCAL		1 (2%)	
LYMPHOID DEPLETION	1 (2%)		1 (2%)
HYPERPLASIA, LYMPHOID		1 (2%)	
#SPLENIC RED PULP	(50)	(49)	(48)
PIGMENTATION, NOS		3 (6%)	2 (4%)
HEMATOPOIESIS	1 (2%)	2 (4%)	2 (4%)
#LYMPH NODE	(49)	(46)	(46)
HEMORRHAGE	1 (2%)		
INFLAMMATION, FOCAL GRANULOMATOU	4 (8%)	2 (4%)	8 (17%)
#MANDIBULAR L. NODE	(49)	(46)	(46)
INFLAMMATION, DIFFUSE			1 (2%)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	1 (2%)
PLASMACYTOSIS	2 (4%)	1 (2%)	1 (2%)
#PANCREATIC L.NODE	(49)	(46)	(46)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	
HEMATOPOIESIS	1 (2%)		
#MESENTERIC L. NODE	(49)	(46)	(46)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)	2 (4%)	2 (4%)
#LUNG/BRONCHUS	(50)	(49)	(48)
HYPERPLASIA, LYMPHOID			1 (2%)
#LUNG	(50)	(49)	(48)
HYPERPLASIA, LYMPHOID	25 (50%)	36 (73%)	35 (73%)
#PORTAL TRACT	(50)	(49)	(48)
HYPERPLASIA, LYMPHOID	1 (2%)		
#KIDNEY	(50)	(49)	(48)
HYPERPLASIA, LYMPHOID	1 (2%)		
#KIDNEY/PELVIS	(50)	(49)	(48)
HEMATOPOIESIS		1 (2%)	

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
CIRCULATORY SYSTEM			
#HEART	(50)	(49)	(48)
DEGENERATION, NOS	43 (86%)	46 (94%)	44 (92%)
#HEART/ATRIUM	(50)	(49)	(48)
THROMBOSIS, NOS			2 (4%)
THROMBUS, ORGANIZED			1 (2%)
#LEFT ATRIUM	(50)	(49)	(48)
THROMBOSIS, NOS		1 (2%)	
THROMBUS, MURAL	1 (2%)	1 (2%)	
#RIGHT VENTRICLE	(50)	(49)	(48)
FIBROSIS, DIFFUSE			1 (2%)
#MYOCARDIUM	(50)	(49)	(48)
FIBROSIS, FOCAL	1 (2%)		
#CARDIAC VALVE	(50)	(49)	(48)
INFLAMMATION, ACUTE/CHRONIC		2 (4%)	
INFLAMMATION, CHRONIC	1 (2%)		
INFLAMMATION, CHRONIC FOCAL			6 (13%)
FIBROSIS, FOCAL			1 (2%)
FIBROSIS, MULTIFOCAL	10 (20%)	17 (35%)	18 (38%)
*PERIAORTIC TISSUE	(50)	(49)	(49)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	
DIGESTIVE SYSTEM			
#SALIVARY GLAND	(50)	(49)	(48)
ATROPHY, FOCAL		2 (4%)	1 (2%)
#LIVER	(50)	(49)	(48)
CONGESTION, CHRONIC PASSIVE			1 (2%)
INFLAMMATION, CHRONIC DIFFUSE			1 (2%)
INFLAMMATION, FOCAL GRANULOMATOU	27 (54%)	24 (49%)	26 (54%)
DEGENERATION, CYSTIC		1 (2%)	
METAMORPHOSIS FATTY		3 (6%)	
CYTOPLASMIC VACUOLIZATION	1 (2%)	1 (2%)	2 (4%)
BASOPHILIC CYTO CHANGE	31 (62%)	45 (92%)	33 (69%)
FOCAL CELLULAR CHANGE		1 (2%)	1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
CLEAR-CELL CHANGE		9 (18%)	11 (23%)
ANGIECTASIS		1 (2%)	
#PORTAL TRACT	(50)	(49)	(48)
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)		
FIBROSIS	2 (4%)		
#LIVER/CENTRILOBULAR	(50)	(49)	(48)
CONGESTION, NOS		1 (2%)	
CONGESTION, ACUTE	1 (2%)		
NECROSIS, FOCAL	1 (2%)		1 (2%)
NECROSIS, DIFFUSE	2 (4%)	1 (2%)	
CYTOPLASMIC VACUOLIZATION	1 (2%)		
#LIVER/HEPATOCYTES	(50)	(49)	(48)
NECROSIS, FOCAL	2 (4%)		
#BILE DUCT	(50)	(49)	(48)
FIBROSIS, MULTIFOCAL		1 (2%)	
HYPERPLASIA, FOCAL	23 (46%)	37 (76%)	38 (79%)
#PANCREAS	(49)	(49)	(48)
DILATATION/DUCTS		1 (2%)	
INFLAMMATION, ACUTE/CHRONIC	1 (2%)		
INFLAMMATION, CHRONIC DIFFUSE		1 (2%)	
#PANCREATIC ACINUS	(49)	(49)	(48)
ATROPHY, NOS			1 (2%)
ATROPHY, FOCAL	3 (6%)	20 (41%)	21 (44%)
ATROPHY, DIFFUSE	1 (2%)	2 (4%)	3 (6%)
#CARDIAC STOMACH	(50)	(49)	(47)
ULCER, NOS			1 (2%)
HYPERPLASIA, NOS			1 (2%)
#GASTRIC FUNDUS	(50)	(49)	(47)
HYPERPLASIA, FOCAL			1 (2%)
#COLON	(49)	(49)	(48)
NEMATODIASIS			1 (2%)
URINARY SYSTEM			
#KIDNEY	(50)	(49)	(48)
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
NEPHROPATHY	11 (22%)	16 (33%)	25 (52%)
INFARCT, ACUTE	1 (2%)		
PIGMENTATION, NOS	1 (2%)		1 (2%)
#KIDNEY/CORTEX	(50)	(49)	(48)
GLOMERULOSCLEROSIS, NOS	1 (2%)	1 (2%)	
INFARCT, FOCAL			1 (2%)
#KIDNEY/TUBULE	(50)	(49)	(48)
DILATATION, NOS	7 (14%)	2 (4%)	1 (2%)
CYST, NOS		1 (2%)	
PIGMENTATION, NOS	1 (2%)	1 (2%)	
REGENERATION, NOS	7 (14%)	3 (6%)	7 (15%)
#KIDNEY/PELVIS	(50)	(49)	(48)
MINERALIZATION	2 (4%)		
#URINARY BLADDER	(47)	(46)	(47)
HYPERPLASIA, EPITHELIAL			1 (2%)
HYPERPLASIA, DIFFUSE			1 (2%)
METAPLASIA, SQUAMOUS			1 (2%)
#U. BLADDER/MUCOSA	(47)	(46)	(47)
DEGENERATION, HYDROPIC	1 (2%)		
ENDOCRINE SYSTEM			
#PITUITARY	(44)	(45)	(46)
CYST, NOS		2 (4%)	
HYPERPLASIA, NOS	1 (2%)	2 (4%)	1 (2%)
HYPERPLASIA, CHROMOPHOBE-CELL	3 (7%)	6 (13%)	7 (15%)
#ADRENAL	(49)	(48)	(48)
METAMORPHOSIS FATTY			1 (2%)
HYPERPLASIA, NODULAR		1 (2%)	
ANGIECTASIS	1 (2%)		
#ADRENAL CORTEX	(49)	(48)	(48)
CYST, NOS		2 (4%)	2 (4%)
CONGESTION, PASSIVE			1 (2%)
HEMORRHAGIC CYST			1 (2%)
DEGENERATION, NOS		1 (2%)	
METAMORPHOSIS FATTY	5 (10%)	8 (17%)	6 (13%)
PIGMENTATION, NOS	1 (2%)		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
FOCAL CELLULAR CHANGE	2 (4%)		1 (2%)
ATROPHY, NOS	1 (2%)		
HYPERPLASIA, NODULAR	4 (8%)	4 (8%)	
HYPERPLASIA, NOS		1 (2%)	
HYPERPLASIA, FOCAL			2 (4%)
ANGIECTASIS		2 (4%)	4 (8%)
#ZONA GLOMERULOSA	(49)	(48)	(48)
INFLAMMATION, CHRONIC DIFFUSE			1 (2%)
#THYROID	(50)	(49)	(48)
HYPERPLASIA, C-CELL	41 (82%)	40 (82%)	41 (85%)
#THYROID FOLLICLE	(50)	(49)	(48)
MULTILOCULAR CYST			1 (2%)
MULTIPLE CYSTS			1 (2%)
#PARATHYROID	(40)	(38)	(35)
CYTOPLASMIC VACUOLIZATION			1 (3%)
HYPERPLASIA, FOCAL			1 (3%)
#PANCREATIC ISLETS	(49)	(49)	(48)
HYPERPLASIA, FOCAL		1 (2%)	
REPRODUCTIVE SYSTEM			
*MAMMARY GLAND	(50)	(49)	(49)
DILATATION, NOS	1 (2%)		
DILATATION/DUCTS	20 (40%)	18 (37%)	20 (41%)
CYST, NOS	1 (2%)		
HYPERPLASIA, NOS		1 (2%)	
HYPERPLASIA, CYSTIC	6 (12%)		
*MAMMARY ACINUS	(50)	(49)	(49)
DILATATION, NOS	18 (36%)	22 (45%)	19 (39%)
HYPERPLASIA, NOS	1 (2%)	1 (2%)	
HYPERPLASIA, FOCAL		4 (8%)	3 (6%)
*CLITORAL GLAND	(50)	(49)	(49)
CYST, NOS	1 (2%)		
#UTERUS	(49)	(47)	(48)
EMBRYONAL REST			1 (2%)
DILATATION, NOS	4 (8%)	1 (2%)	4 (8%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
INFLAMMATION, FOCAL GRANULOMATOU			1 (2%)
#CERVIX UTERI	(49)	(47)	(48)
FIBROSIS		1 (2%)	
FIBROSIS, DIFFUSE			1 (2%)
#UTERUS/ENDOMETRIUM	(49)	(47)	(48)
HYPERPLASIA, CYSTIC			2 (4%)
HYPERPLASIA, STROMAL	1 (2%)		1 (2%)
#ENDOMETRIAL GLAND	(49)	(47)	(48)
DILATATION, NOS	1 (2%)		
HYPERPLASIA, DIFFUSE	1 (2%)		
HYPERPLASIA, CYSTIC	6 (12%)	14 (30%)	6 (13%)
HYPERPLASIA, ADENOMATOUS		1 (2%)	
#OVARY	(49)	(47)	(48)
CYST, NOS	1 (2%)	1 (2%)	
NERVOUS SYSTEM			
#CEREBRAL VENTRICLE	(50)	(49)	(48)
HYDROCEPHALUS, NOS	1 (2%)		
#CEREBRUM	(50)	(49)	(48)
HEMORRHAGE	1 (2%)		
INFARCT, NOS	1 (2%)		
ATROPHY, PRESSURE	4 (8%)	4 (8%)	4 (8%)
#BRAIN	(50)	(49)	(48)
HEMORRHAGE	1 (2%)		
ATROPHY, PRESSURE	4 (8%)		
SPECIAL SENSE ORGANS			
*EYE/RETINA	(50)	(49)	(49)
DEGENERATION, NOS	2 (4%)	1 (2%)	
*EYE/CRYSTALLINE LENS	(50)	(49)	(49)
MINERALIZATION	1 (2%)		
DEGENERATION, NOS		1 (2%)	
MUSCULOSKELETAL SYSTEM			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE C2. FEMALE RATS: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
BODY CAVITIES			
*MESENTERY	(50)	(49)	(49)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
ALL OTHER SYSTEMS			
ADIPOSE TISSUE			
INFLAMMATION, FOCAL GRANULOMATOU	1		
SPECIAL MORPHOLOGY SUMMARY			
ACCIDENTAL DEATH			1
AUTO/NECROPSY/NO HISTO			1

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

APPENDIX D

Summary of the Incidence of Nonneoplastic Lesions in Mice Fed Diets Containing C. I. Solvent Yellow 14

TABLE D1.

SUMMARY OF THE INCIDENCE OF NONNEOPLASTIC LESIONS IN MALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS MISSING	1		
ANIMALS NECROPSIED	49	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	49	50	50
INTEGUMENTARY SYSTEM			
*SKIN	(49)	(50)	(50)
ULCER, ACUTE	1 (2%)		
FIBROSIS, FOCAL	2 (4%)		
METAPLASIA, OSSEOUS		2 (4%)	
*SUBCUT TISSUE	(49)	(50)	(50)
GRANULOMA, NOS		1 (2%)	
RESPIRATORY SYSTEM			
#LUNG/BRONCHIOLE	(49)	(50)	(50)
HYPERPLASIA, NOS	7 (14%)	2 (4%)	3 (6%)
HYPERPLASIA, EPITHELIAL		1 (2%)	1 (2%)
#LUNG	(49)	(50)	(50)
EDEMA, NOS		1 (2%)	
HEMORRHAGE, CHRONIC		1 (2%)	
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)		
INFLAMMATION, INTERSTITIAL		1 (2%)	1 (2%)
INFLAMMATION ACUTE AND CHRONIC	1 (2%)		
PNEUMONIA INTERSTITIAL CHRONIC	9 (18%)	3 (6%)	14 (28%)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
HYPERPLASIA, ALVEOLAR EPITHELIUM	7 (14%)	6 (12%)	3 (6%)
HISTIOCYTOSIS		3 (6%)	2 (4%)
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(49)	(50)	(50)
PLASMACYTOSIS		1 (2%)	
HYPERPLASIA, LYMPHOID			1 (2%)
#BONE MARROW	(47)	(48)	(49)
HYPERPLASIA, RETICULUM CELL		1 (2%)	

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#SPLEEN	(49)	(50)	(50)
AMYLOIDOSIS			1 (2%)
LYMPHOID DEPLETION		1 (2%)	1 (2%)
ANGIECTASIS	1 (2%)		
HYPERPLASIA, HEMATOPOIETIC		1 (2%)	
HYPERPLASIA, RETICULUM CELL	2 (4%)	1 (2%)	
HYPERPLASIA, LYMPHOID			1 (2%)
HEMATOPOIESIS	1 (2%)		
#SPLENIC FOLLICLES	(49)	(50)	(50)
NECROSIS, FOCAL	1 (2%)		
#MANDIBULAR L. NODE	(41)	(46)	(43)
INFLAMMATION, ACUTE DIFFUSE		1 (2%)	
LYMPHOID DEPLETION	1 (2%)		
HYPERPLASIA, RETICULUM CELL		1 (2%)	
HYPERPLASIA, LYMPHOID	1 (2%)	1 (2%)	
#PANCREATIC L.NODE	(41)	(46)	(43)
HEMORRHAGE	1 (2%)		1 (2%)
HYPERPLASIA, LYMPHOID			1 (2%)
#MESENTERIC L. NODE	(41)	(46)	(43)
DILATATION, NOS			1 (2%)
EDEMA, NOS		1 (2%)	
HEMORRHAGE	10 (24%)	1 (2%)	2 (5%)
INFLAMMATION, ACUTE DIFFUSE		1 (2%)	
INFLAMMATION ACUTE AND CHRONIC		1 (2%)	
INFLAMMATION, GRANULOMATOUS		1 (2%)	
INFLAMMATION, PYOGRANULOMATOUS	1 (2%)		
HYPERPLASIA, RETICULUM CELL		1 (2%)	
HYPERPLASIA, LYMPHOID		1 (2%)	1 (2%)
#LIVER/CENTRILOBULAR	(49)	(50)	(50)
ERYTHROPHAGOCYTOSIS		1 (2%)	
#PEYER'S PATCH	(48)	(49)	(45)
HYPERPLASIA, LYMPHOID			1 (2%)
#KIDNEY	(48)	(50)	(50)
HYPERPLASIA, LYMPHOID		1 (2%)	
#U.BLADDER/SUBMUCOSA	(49)	(46)	(49)
HYPERPLASIA, LYMPHOID	1 (2%)		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#THYMUS	(33)	(31)	(27)
LYMPHOID DEPLETION	1 (3%)		
CIRCULATORY SYSTEM			
#LUNG	(49)	(50)	(50)
THROMBOSIS, NOS		2 (4%)	
#HEART	(49)	(50)	(49)
THROMBOSIS, NOS			1 (2%)
#LEFT ATRIUM	(49)	(50)	(49)
THROMBOSIS, NOS		1 (2%)	
#MYOCARDIUM	(49)	(50)	(49)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
*CORONARY ARTERY	(49)	(50)	(50)
INFLAMMATION ACUTE AND CHRONIC			1 (2%)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
*PULMONARY ARTERY	(49)	(50)	(50)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
#HEPATIC SINUSOID	(49)	(50)	(50)
CONGESTION, NOS			1 (2%)
#PANCREAS	(47)	(50)	(49)
PERIARTERITIS			1 (2%)
*MESENTERY	(49)	(50)	(50)
THROMBOSIS, NOS		1 (2%)	
#URINARY BLADDER	(49)	(46)	(49)
PERIARTERITIS			1 (2%)
DIGESTIVE SYSTEM			
#SALIVARY GLAND	(48)	(48)	(49)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
#LIVER	(49)	(50)	(50)
MULTILOCULAR CYST	1 (2%)		

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
INFLAMMATION ACUTE AND CHRONIC		3 (6%)	1 (2%)
GRANULOMA, NOS	2 (4%)		1 (2%)
INFLAMMATION, NECRO GRAN	1 (2%)		
NECROSIS, COAGULATIVE		1 (2%)	
AMYLOIDOSIS			1 (2%)
FOCAL CELLULAR CHANGE			1 (2%)
CLEAR-CELL CHANGE			1 (2%)
#LIVER/HEPATOCYTES	(49)	(50)	(50)
DEGENERATION, NOS	1 (2%)		
NECROSIS, NOS		1 (2%)	
NECROSIS, FOCAL	2 (4%)	3 (6%)	3 (6%)
REGENERATION, NOS	1 (2%)		
#BILE DUCT	(49)	(50)	(50)
CYST, NOS	1 (2%)		
HYPERPLASIA, NOS			1 (2%)
#PANCREATIC ACINUS	(47)	(50)	(49)
ATROPHY, FOCAL	3 (6%)	1 (2%)	1 (2%)
#STOMACH	(47)	(48)	(49)
CYST, NOS	1 (2%)		
INFLAMMATION ACUTE AND CHRONIC	1 (2%)		
HYPERPLASIA, EPITHELIAL	1 (2%)		
#CARDIAC STOMACH	(47)	(48)	(49)
ULCER, FOCAL			1 (2%)
#PEYER'S PATCH	(48)	(49)	(45)
INFLAMMATION, FOCAL GRANULOMATOU		1 (2%)	
#COLON	(45)	(48)	(47)
NEMATODIASIS		2 (4%)	3 (6%)
URINARY SYSTEM			
#KIDNEY	(48)	(50)	(50)
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)	1 (2%)	
PYELONEPHRITIS, ACUTE	1 (2%)	1 (2%)	
GLOMERULONEPHRITIS, SUBACUTE			1 (2%)
INFLAMMATION, CHRONIC FOCAL	1 (2%)		
NEPHROPATHY		1 (2%)	
GLOMERULOSCLEROSIS, NOS	1 (2%)	1 (2%)	

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HYPERPLASIA, TUBULAR CELL	1 (2%)		
METAPLASIA, OSSEOUS	2 (4%)		
#KIDNEY/CORTEX	(48)	(50)	(50)
CYST, NOS			1 (2%)
INFLAMMATION, CHRONIC FOCAL		2 (4%)	
NECROSIS, FOCAL		1 (2%)	
#KIDNEY/TUBULE	(48)	(50)	(50)
DILATATION, NOS			1 (2%)
DEGENERATION, NOS			2 (4%)
REGENERATION, NOS	3 (6%)	3 (6%)	3 (6%)
*PERIURETERAL TISSUE	(49)	(50)	(50)
LYMPHOCYTIC INFLAMMATORY INFILTR		1 (2%)	
#URINARY BLADDER	(49)	(46)	(49)
NECROSIS, FOCAL	1 (2%)		
#U.BLADDER/SUBMUCOSA	(49)	(46)	(49)
INFLAMMATION, ACUTE/CHRONIC	1 (2%)		
*URETHRA	(49)	(50)	(50)
OBSTRUCTION, NOS	1 (2%)		
*PROSTATIC URETHRA	(49)	(50)	(50)
INFLAMMATION, ACUTE DIFFUSE		1 (2%)	
INFLAMMATION, ACUTE SUPPURATIVE	1 (2%)		
ENDOCRINE SYSTEM			
#ADRENAL	(48)	(50)	(49)
FOCAL CELLULAR CHANGE			1 (2%)
#ADRENAL CORTEX	(48)	(50)	(49)
FOCAL CELLULAR CHANGE			6 (12%)
#ZONA FASCICULATA	(48)	(50)	(49)
FOCAL CELLULAR CHANGE	2 (4%)		1 (2%)
#THYROID	(49)	(48)	(50)
THYROGLOSSAL DUCT CYST	2 (4%)		
CYST, NOS			1 (2%)
MULTILOCULAR CYST			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
HYPERPLASIA, FOLLICULAR-CELL			2 (4%)
#PANCREATIC ISLETS	(47)	(50)	(49)
HYPERPLASIA, NOS			1 (2%)
REPRODUCTIVE SYSTEM			
*PENIS	(49)	(50)	(50)
OBSTRUCTION, NOS	1 (2%)		
#PROSTATIC GLAND	(48)	(47)	(48)
ECTOPIA			1 (2%)
#TESTIS	(48)	(50)	(49)
MINERALIZATION	1 (2%)		
FIBROSIS	1 (2%)		
ATROPHY, NOS	1 (2%)		
#TESTIS/TUBULE	(48)	(50)	(49)
MINERALIZATION			1 (2%)
ATROPHY, DIFFUSE	3 (6%)	1 (2%)	
*EPIDIDYMIS	(49)	(50)	(50)
INFLAMMATION, CHRONIC FOCAL	2 (4%)		
INFLAMMATION, FOCAL GRANULOMATOU			2 (4%)
NERVOUS SYSTEM			
#LATERAL VENTRICLE	(49)	(50)	(50)
HYDROCEPHALUS, NOS	1 (2%)		
#HYPOTHALAMUS	(49)	(50)	(50)
ATROPHY, PRESSURE			1 (2%)
SPECIAL SENSE ORGANS			
NONE			
MUSCULOSKELETAL SYSTEM			
NONE			

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D1. MALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
BODY CAVITIES			
*PERITONEUM	(49)	(50)	(50)
INFLAMMATION, ACUTE		1 (2%)	
*MEDIASTINAL PLEURA	(49)	(50)	(50)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
*PERICARDIUM	(49)	(50)	(50)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
ALL OTHER SYSTEMS			
*MULTIPLE ORGANS	(49)	(50)	(50)
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)		
CRANIOBUCCAL POUCH			
CYSTIC DUCTS	1		
SPECIAL MORPHOLOGY SUMMARY			
NO LESION REPORTED	4	7	5
ANIMAL MISSING/NO NECROPSY	1		
AUTO/NECROPSY/HISTO PERF	1		1

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2.

SUMMARY OF THE INCIDENCE OF NONNEOPLASTIC LESIONS IN FEMALE MICE FED DIETS CONTAINING C.I. SOLVENT YELLOW 14

	CONTROL	LOW DOSE	HIGH DOSE
ANIMALS INITIALLY IN STUDY	50	50	50
ANIMALS NECROPSIED	50	50	50
ANIMALS EXAMINED HISTOPATHOLOGICALLY	50	50	50
INTEGUMENTARY SYSTEM			
*SUBCUT TISSUE	(50)	(50)	(50)
FIBROSIS, DIFFUSE		1 (2%)	
RESPIRATORY SYSTEM			
#LUNG	(50)	(50)	(49)
EDEMA, NOS	1 (2%)	1 (2%)	
LYMPHOCYTIC INFLAMMATORY INFILTR		1 (2%)	
PNEUMONIA INTERSTITIAL CHRONIC	8 (16%)	7 (14%)	3 (6%)
PERIVASCULAR CUFFING	1 (2%)		
HYPERPLASIA, ALVEOLAR EPITHELIUM	3 (6%)	7 (14%)	2 (4%)
HEMATOPOIETIC SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
HYPERPLASIA, LYMPHOID	1 (2%)		
*SKIN	(50)	(50)	(50)
MASTOCYTOSIS	1 (2%)		
#BONE MARROW	(47)	(48)	(49)
NECROSIS, FOCAL	1 (2%)		
#SPLEEN	(50)	(49)	(49)
INFLAMMATION, ACUTE FOCAL			1 (2%)
ANGIECTASIS	1 (2%)		
HYPERPLASIA, RETICULUM CELL			1 (2%)
HYPERPLASIA, LYMPHOID	2 (4%)	3 (6%)	1 (2%)
HEMATOPOIESIS	1 (2%)		
#MANDIBULAR L. NODE	(45)	(45)	(46)
HYPERPLASIA, LYMPHOID			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2. FEMALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#MEDIASTINAL L.NODE	(45)	(45)	(46)
INFLAMMATION, GRANULOMATOUS	1 (2%)		
#MESENTERIC L. NODE	(45)	(45)	(46)
PLASMACYTOSIS			1 (2%)
#PEYER'S PATCH	(48)	(49)	(48)
HYPERPLASIA, LYMPHOID	4 (8%)		
#THYMIC MEDULLA	(36)	(38)	(34)
HYPERPLASIA, EPITHELIAL	1 (3%)	1 (3%)	
CIRCULATORY SYSTEM			
*MULTIPLE ORGANS	(50)	(50)	(50)
PERIARTERITIS	1 (2%)		1 (2%)
#RENAL LYMPH NODE	(45)	(45)	(46)
LYMPHANGIECTASIS	1 (2%)		
#HEART	(50)	(49)	(50)
MINERALIZATION			1 (2%)
THROMBOSIS, NOS	1 (2%)		
#RIGHT ATRIUM	(50)	(49)	(50)
THROMBOSIS, NOS		1 (2%)	
#RIGHT VENTRICLE	(50)	(49)	(50)
PERIVASCULITIS		1 (2%)	
#MYOCARDIUM	(50)	(49)	(50)
INFLAMMATION, INTERSTITIAL	1 (2%)		
INFLAMMATION, CHRONIC FOCAL	1 (2%)	2 (4%)	
*ARTERY	(50)	(50)	(50)
INFLAMMATION, CHRONIC FOCAL		1 (2%)	
METAPLASIA, OSSEOUS		1 (2%)	
*SPLENIC ARTERY	(50)	(50)	(50)
NECROSIS, FIBRINOID	1 (2%)		
DIGESTIVE SYSTEM			
#LIVER	(50)	(50)	(50)
INFLAMMATION ACUTE AND CHRONIC			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2. FEMALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
INFLAMMATION, FOCAL GRANULOMATOU			1 (2%)
PERIVASCULAR CUFFING	1 (2%)		
NECROSIS, FOCAL	2 (4%)		1 (2%)
NECROSIS, COAGULATIVE	1 (2%)		
NECROSIS, ISCHEMIC	1 (2%)		
METAMORPHOSIS FATTY			1 (2%)
BASOPHILIC CYTO CHANGE	1 (2%)	1 (2%)	
#LIVER/CENTRILOBULAR	(50)	(50)	(50)
NECROSIS, FOCAL	1 (2%)		
#LIVER/PERIPORTAL	(50)	(50)	(50)
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
#LIVER/HEPATOCYTES	(50)	(50)	(50)
NECROSIS, FOCAL	2 (4%)		
#PANCREAS	(47)	(48)	(49)
DILATATION/DUCTS		1 (2%)	
CYSTIC DUCTS	1 (2%)		
#PANCREATIC ACINUS	(47)	(48)	(49)
ATROPHY, DIFFUSE	1 (2%)		
#CARDIAC STOMACH	(49)	(49)	(49)
INFLAMMATION ACUTE AND CHRONIC			1 (2%)
HYPERPLASIA, EPITHELIAL			1 (2%)
#COLON	(47)	(49)	(48)
NEMATODIASIS	4 (9%)	2 (4%)	2 (4%)
URINARY SYSTEM			
#KIDNEY	(50)	(49)	(49)
HYDRONEPHROSIS			1 (2%)
GLOMERULONEPHRITIS, SUBACUTE	1 (2%)		
INFLAMMATION, CHRONIC DIFFUSE			1 (2%)
NEPHROSIS, NOS		1 (2%)	1 (2%)
GLOMERULOSCLEROSIS, NOS	1 (2%)		
INFARCT, FOCAL	2 (4%)		
METAPLASIA, OSSEOUS			1 (2%)
#KIDNEY/CORTEX	(50)	(49)	(49)
MULTIPLE CYSTS			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2. FEMALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
LYMPHOCYTIC INFLAMMATORY INFILTR			1 (2%)
DEGENERATION, NOS		1 (2%)	
#KIDNEY/TUBULE	(50)	(49)	(49)
DEGENERATION, NOS		1 (2%)	1 (2%)
REGENERATION, NOS	1 (2%)		
#U.BLADDER/SUBMUCOSA	(46)	(46)	(46)
INFLAMMATION, ACUTE FOCAL			1 (2%)
ENDOCRINE SYSTEM			
#PITUITARY	(43)	(38)	(46)
HYPERPLASIA, CHROMOPHOBE-CELL	1 (2%)	3 (8%)	1 (2%)
#ANTERIOR PITUITARY	(43)	(38)	(46)
CYST, NOS			1 (2%)
#THYROID	(49)	(47)	(47)
COLLOID CYST	1 (2%)		
INFLAMMATION, ACUTE FOCAL		1 (2%)	
GRANULOMA, NOS	1 (2%)		
HYPERPLASIA, FOLLICULAR-CELL			1 (2%)
#PARATHYROID	(30)	(26)	(24)
HYPERPLASIA, NOS	6 (20%)	2 (8%)	3 (13%)
#PANCREATIC ISLETS	(47)	(48)	(49)
HYPERPLASIA, FOCAL		1 (2%)	2 (4%)
REPRODUCTIVE SYSTEM			
#UTERUS	(49)	(47)	(49)
CYST, NOS			1 (2%)
#UTERUS/ENDOMETRIUM	(49)	(47)	(49)
INFLAMMATION, ACUTE DIFFUSE			1 (2%)
#ENDOMETRIAL GLAND	(49)	(47)	(49)
CYST, NOS	1 (2%)		
MULTIPLE CYSTS	5 (10%)	3 (6%)	5 (10%)
INFLAMMATION ACUTE AND CHRONIC		1 (2%)	
HYPERPLASIA, CYSTIC	30 (61%)	35 (74%)	31 (63%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2. FEMALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
#OVARY	(46)	(46)	(48)
CYST, NOS		2 (4%)	4 (8%)
FOLLICULAR CYST, NOS	9 (20%)	4 (9%)	3 (6%)
MULTIPLE CYSTS			1 (2%)
PAROVARIAN CYST		1 (2%)	3 (6%)
HEMORRHAGIC CYST	4 (9%)	6 (13%)	1 (2%)
HYPERPLASIA, EPITHELIAL			1 (2%)
#GERMINAL EPITHELIUM	(46)	(46)	(48)
HYPERPLASIA, NOS			1 (2%)
NERVOUS SYSTEM			
#BRAIN	(49)	(49)	(50)
PERIVASCULAR CUFFING			1 (2%)
NECROSIS, FOCAL	1 (2%)		
#HYPOTHALAMUS	(49)	(49)	(50)
ATROPHY, PRESSURE	1 (2%)		
SPECIAL SENSE ORGANS			
NONE			
MUSCULOSKELETAL SYSTEM			
NONE			
BODY CAVITIES			
*MEDIASTINUM	(50)	(50)	(50)
LYMPHOCYTIC INFLAMMATORY INFILTR	1 (2%)		
*PERITONEUM	(50)	(50)	(50)
INFLAMMATION, ACUTE FIBRINOUS		1 (2%)	
INFLAMMATION, CHRONIC FOCAL	1 (2%)		
INFLAMMATION, FOCAL GRANULOMATOU	1 (2%)		
*MESENTERY	(50)	(50)	(50)
GRANULOMA, FOREIGN BODY			1 (2%)

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

TABLE D2. FEMALE MICE: NONNEOPLASTIC LESIONS (CONTINUED)

	CONTROL	LOW DOSE	HIGH DOSE
ALL OTHER SYSTEMS			
*MULTIPLE ORGANS	(50)	(50)	(50)
LYMPHOCYTIC INFLAMMATORY INFILTR			1 (2%)
SITE UNKNOWN			
ABSCESS, CHRONIC			1
SPECIAL MORPHOLOGY SUMMARY			
AUTO/NECROPSY/HISTO PERF		1	1

NUMBER OF ANIMALS WITH TISSUE EXAMINED MICROSCOPICALLY
* NUMBER OF ANIMALS NECROPSIED

APPENDIX E

Analysis of C. I. Solvent Yellow 14
(Lot No. PY112075)
Midwest Research Institute

APPENDIX E

Analysis of C. I. Solvent Yellow 14

(Lot No. PY112075)

A. Elemental Analysis

Element	C	H	N
Theory	77.40	4.87	11.29
Determined	76.66	4.71	11.04
	76.71	4.72	10.94

B. Water Analysis

(Karl Fisher) 0.5 ± 0.1 (δ)%

C. Titration with Titanous Chloride (Horwitz, 1975)

94.1 ± 0.5 (δ)%

D. Melting Point

	Determined	Literature Values
m.p.	131°-134°C, dec. (visual; sealed, evacuated capillary)	133°-134°C (Ernsberger and Brode, 1941)

E. Thin-Layer Chromatography

Plates: Silica Gel 60F-254
Amount Spotted: 100 and 300 μg
Ref. Standard: Azobenzene
Visualization: Visual
Ultraviolet, 254 and 366 nm

System 1: CH_2Cl_2 (100%)	System 2: CCl_4 (100%)
R_f: 0.90 (trace)	R_f: 0.36 (trace)
0.77 (major)	0.29 (trace)
0.66 (trace)	0.16 (major)
0.13 (trace)	0.04 (trace)
Origin (trace)	Origin (trace)

R_{st}: 1.00, 0.85, 0.73, 0.14, origin

R_{st}: 0.63, 0.51, 0.28, 0.08, origin

F. High-Pressure Liquid Chromatography

Instrument: Waters ALC 202 with Model 660 Solvent Programmer
Column: C_{18} μ-Bondapak, 300 x 4 mm I.D.
Detector: Ultraviolet, 254 nm
Solvent: 75% B + 25% A
A: 0.005 M tetrabutyl ammonium hydroxide and 1% acetic acid in water.
B: 0.005 M tetrabutyl ammonium hydroxide and 1% acetic acid in methanol.
Flow: 1.5 ml/min
Results: Major peak and 2 minor peaks

Peak	Retention Time (min.)	Retention Time Relative to Solvent Yellow 14	Area Relative to Solvent Yellow 14
minor	3.1	0.23	0.5
minor	4.1	0.30	0.2
major	13.6	1.00	100

G. Spectral Data

(1) Infrared:

Instrument: Beckman IR-12
Cell: 0.75% in potassium bromide
Results: See Figure 5.

Consistent with literature spectrum (Sadtler Standard Spectra)

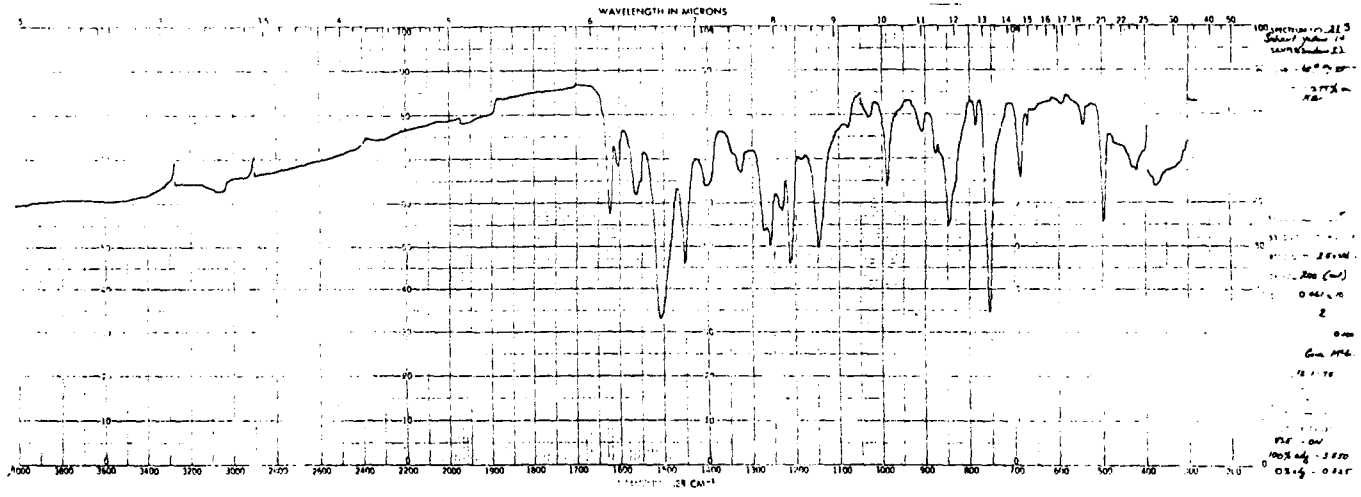

Figure 5. Infrared Absorption Spectrum of C.I. Solvent Yellow 14

(2) Ultraviolet/Visible:

Instrument: Cary 118

λ max (nm)	$\epsilon \times 10^{-3}$
229.5	35.9 ± 0.3 (δ)
254.5	10.75 ± 0.04 (δ)
260(a)	10.06 ± 0.04 (δ)
264(a)	9.55 ± 0.08 (δ)
279.5	6.26 ± 0.04 (δ)
304	6.40 ± 0.04 (δ)
316(a)	6.11 ± 0.04 (δ)
360(a)	6.28 ± 0.05 (δ)
380(a)	7.18 ± 0.07 (δ)
433	11.88 ± 0.06 (δ)
463	12.2 ± 0.1 (δ)
495(a)	9.31 ± 0.08 (δ)

Solvent: n-Hexane

Literature Values (Przybylski and McKeown, 1960)

λ max (nm)	$\epsilon \times 10^{-3}$
230	36.84
254(a)	11.0
263(a)	9.9
280	6.43
303	6.62
314(a)	6.4
363(a)	6.3
380(a)	7.5
430	12.28
462	12.60
492(a)	9.6

Solvent: n-Hexane

(a) Denotes point of inflection.

(3) Nuclear Magnetic Resonance:

Instrument: Varian HA-100
Solvent: Benzene-d_6 with internal tetramethylsilane
Assignments: (See Figure 6): (a and b) m, δ = 6.85-7.64 ppm; (c) d, δ = 8.77 ppm
Integration Ratios: (a and b) 10.62; (c) 0.38

No literature reference found. Spectrum consistent with the structure.

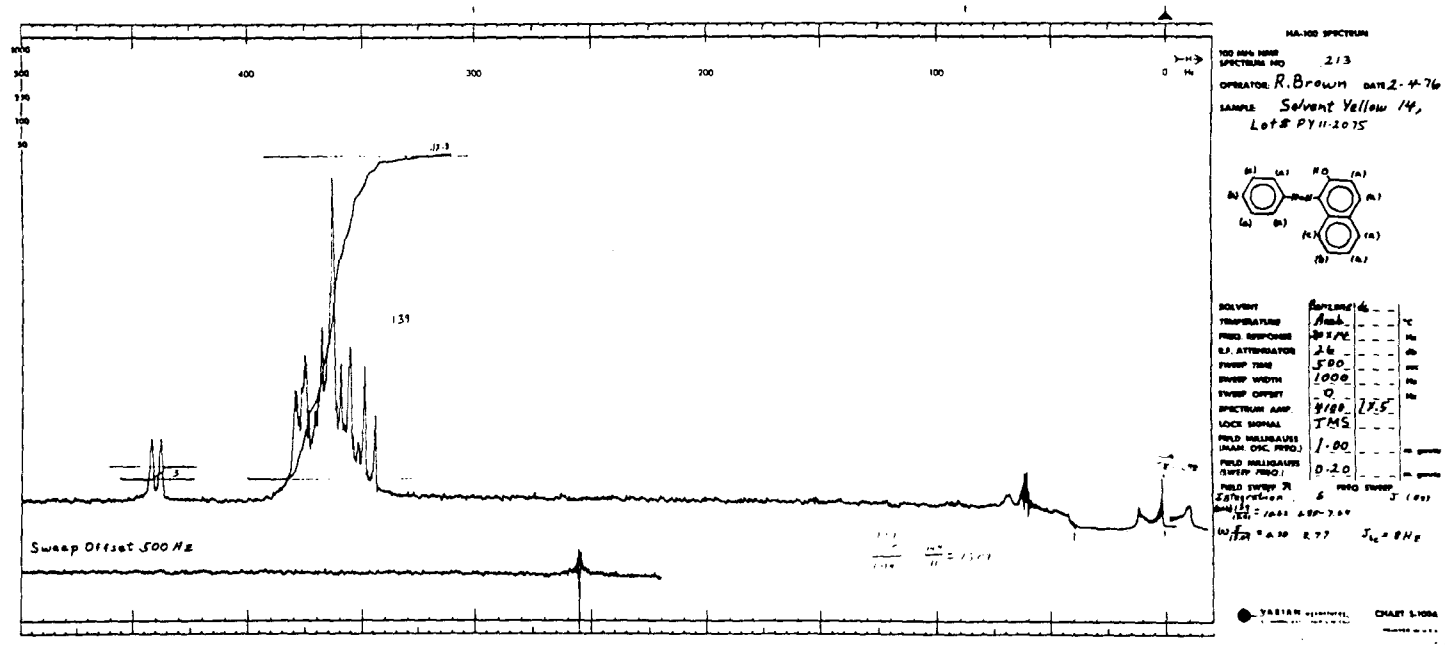

Figure 6. Nuclear Magnetic Resonance Spectrum of C.I. Solvent Yellow 14

APPENDIX F

Analysis of Formulated Diets for Stability of C. I. Solvent Yellow 14

APPENDIX F

Analysis of Formulated Diets for Stability of C. I. Solvent Yellow 14

1. MIXING AND STORAGE

C. I. Solvent Yellow 14 (2.551 g) and Wayne Lab-Blox® Rodent Feed (21.103 g) were mixed in a mortar. Samples of the mixture were removed and stored for 2 weeks at -20°, 5°, 25°, and 45°C, respectively. These samples were then analyzed by high-pressure liquid chromatography, as described below.

2. EXTRACTION

One-gram samples of each of the above mixtures were mixed with 50 ml of methanol in an ultrasonic vibratory bath for 1 minute and then were triturated for 1 minute with a Polytron® high-speed blender. The mixture was centrifuged, and the supernatant solution was decanted into a 100-ml volumetric flask. This extraction was repeated on the feed residue, and the combined supernatant solutions were brought to volume with fresh methanol.

3. ANALYSIS

Instrument: Waters ALC 202 with Model 660 Solvent Programmer
Column: C_{18} μ-Bondapak, 300 x 4 mm I.D.
Detection: Ultraviolet, 254 nm
Solvent: 13% A + 87% B (see Appendix E, Section F for solvent compositions)
Flow rate: 1.5 ml/min.

Sample (°C)	Average Percentage Compound (a)
-20	10.6 ± 0.2
5	10.7 ± 0.2
25	10.4 ± 0.2
45	10.6 ± 0.2

(a) Corrected for a spiked recovery yield of 97.8%; theoretical 100% value = 10.8%

There was no significant difference between samples stored at the various temperatures.

4. CONCLUSION

C. I. Solvent Yellow 14 mixed with feed is stable for 2 weeks at temperatures up to 45°C.

APPENDIX G

Analysis of Formulated Diets for Concentrations of C. I. Solvent Yellow 14

APPENDIX G

Analysis of Formulated Diets for Concentrations of C. I. Solvent Yellow 14

A 100-mg sample of the dye-feed mixture was mixed with 10 ml of solvent (100% acetone) and agitated on a vortex mixer for 30 seconds. The suspension was centrifuged at room temperature for 5 minutes at 2,000 rpm. Levels used in the chronic study permit direct reading of the supernatant at 473 nm without further dilution. Internal standards were prepared using control powdered feed and were assayed in the same manner. All samples and standards were run in triplicate. The absorbance was determined at 473 nm in a Gilford 2400-S spectrophotometer. The spectrophotometer was blanked with a 100-mg feed sample treated in the same manner as the test samples. The standard curve developed with feed-dye standards (triplicate) automatically incorporates a correction for recovery. The concentration of dye in a feed sample could be read directly from the curve without any further adjustment for recovery.

The results of these analyses are summarized in Table G1.

Table G1. Analyses of Formulated Diets

Date Mixed(a)	Date Used	Concentration(b) of C. I. Solvent Yellow 14 for Target Concentration of 250 ppm	500 ppm	1,000 ppm
4/17/77	week of 4/21		510	1,060
8/15/77	week of 8/19	250	510	1,000
		240	480	
			470	
10/21/77	week of 10/25	230	480	1,000
		250	520	
			490	
1/28/78	week of 2/1	270	490	1,000
		270	500	
			500	
4/6/78	week of 4/10		495	995
6/22/78	week of 6/26	256	471	1,020
		252	481	
			482	
7/12/78	week of 7/16	225	502	1,018
		245	494	
			498	
9/13/78	week of 9/16	240	480	1,000
		260	500	
			510	
11/13/78	week of 11/17	240	500	950
		250	490	
			500	
1/23/79	week of 1/26	240	480	960
		250	510	
			520	
3/12/79	week of 3/16		495	970
Mean (ppm)		248	495	998
Standard Deviation		12.5	13.7	30.5
Coefficient of Variation (%)		5	2.7	3
Range (ppm)		230-270	470-520	950-1060
Number of Samples		16	27	11

(a) 4/8/77 was the start date for mice and 3/10/77 was the start date for rats.
(b) The data presented are the average of duplicate analysis.

APPENDIX H

Feed Consumption by Rats and Mice Receiving C. I. Solvent Yellow 14

Table H1. Feed Consumption by Male Rats Receiving C. I. Solvent Yellow 14

Week	Control GRAMS FEED/ DAY(a)	Low GRAMS FEED/ DAY(a)	Low LOW/ CONTROL (b)	High GRAMS FEED/ DAY(a)	High HIGH/ CONTROL (b)
5	19.0	19.6	1.0	18.3	1.0
10	15.9	16.7	1.1	15.0	0.9
14	17.7	16.1	0.9	18.6	1.1
18	17.3	17.4	1.0	17.7	1.0
22	18.3	16.4	0.9	16.9	0.9
26	18.4	17.4	0.9	17.7	1.0
30	20.0	18.1	0.9	18.9	0.9
36	20.3	17.7	0.9	19.9	1.0
41	19.0	17.6	0.9	18.3	1.0
46	24.6	22.7	0.9	25.3	1.0
50	12.0	17.1	1.4	19.1	1.6
54	21.0	19.1	0.9	21.7	1.0
58	24.6	23.3	0.9	23.9	1.0
62	19.7	18.0	0.9	20.1	1.0
67	19.9	23.1	0.9	24.3	1.2
70	22.0	22.7	1.0	23.6	1.1
75	19.9	17.0	0.9	19.7	1.0
81	19.4	16.9	0.9	16.9	0.9
84	21.6	21.0	1.0	22.4	1.0
88	20.9	25.0	1.2	23.6	1.1
92	18.6	18.3	1.0	21.4	1.2
97	18.1	21.9	1.2	23.4	1.3
98	21.0	21.3	1.0	25.4	1.2
101	23.9	20.7	0.9	16.3	0.7
Mean	19.7	19.4	1.0	20.3	1.0
SD (c)	2.7	2.6	0.1	3.1	0.2
CV (d)	13.7	13.4	10.0	15.3	20.0

(a) Grams of feed consumed per animal per day.
(b) Ratio of feed consumed per day for the dosed group to that for the controls.
(c) Standard deviation.
(d) (Standard Deviation/Mean) x 100.

Table H2. Feed Consumption by Female Rats Receiving C. I. Solvent Yellow 14

Week	Control GRAMS FEED/ DAY(a)	Low GRAMS FEED/ DAY(a)	Low LOW/ CONTROL (b)	High GRAMS FEED/ DAY(a)	High HIGH/ CONTROL (b)
3	12.6	13.6	1.1	12.7	1.0
8	13.3	12.9	1.0	12.4	0.9
12	13.4	10.1	0.8	12.1	0.9
16	13.0	12.7	1.0	12.0	0.9
20	13.0	12.6	1.0	12.0	0.9
24	12.7	12.1	1.0	11.0	0.9
28	12.7	13.4	1.1	12.3	1.0
34	13.6	12.7	0.9	12.7	0.9
39	12.0	11.3	0.9	12.6	1.1
44	17.1	19.0	1.1	18.1	1.1
48	20.4	12.0	0.6	11.6	0.6
52	15.3	12.1	0.8	14.0	0.9
56	20.3	18.6	0.9	21.3	1.0
60	13.9	12.4	0.9	13.6	1.0
65	16.3	15.6	1.0	17.3	1.1
68	13.6	17.3	1.3	16.7	1.2
73	13.9	12.9	0.9	13.0	0.9
79	12.6	11.3	0.9	11.1	0.9
82	15.3	13.4	0.9	14.0	0.9
86	16.0	14.3	0.9	16.0	1.0
90	14.9	13.7	0.9	17.4	1.2
95	12.3	12.3	1.0	12.7	1.0
99	13.7	12.7	0.9	13.6	1.0
Mean	14.4	13.4	0.9	13.9	1.0
SD (c)	2.3	2.2	0.1	2.6	0.1
CV (d)	16.0	16.4	11.1	18.7	10.0

(a) Grams of feed consumed per animal per day.
(b) Ratio of feed consumed per day for the dosed group to that for the controls.
(c) Standard deviation.
(d) (Standard Deviation/Mean) x 100.

Table H3. Feed Consumption by Male Mice Receiving C. I. Solvent Yellow 14

Week	Control GRAMS FEED/ DAY(a)	Low GRAMS FEED/ DAY(a)	Low LOW/ CONTROL (b)	High GRAMS FEED/ DAY(a)	High HIGH/ CONTROL (b)
1	7.7	7.6	1.0	7.7	1.0
5	7.3	7.9	1.1	7.7	1.1
10	3.3	3.9	1.2	3.6	1.1
14	5.7	6.0	1.1	5.9	1.0
19	8.3	8.1	1.0	7.9	1.0
23	8.4	8.7	1.0	8.3	1.0
27	8.4	8.9	1.1	8.4	1.0
33	8.0	8.3	1.0	8.4	1.1
37	8.3	8.3	1.0	8.1	1.0
42	7.9	8.1	1.0	8.3	1.1
46	8.3	8.3	1.0	8.3	1.0
50	8.7	8.4	1.0	8.6	1.0
54	8.6	8.6	1.0	8.6	1.0
58	7.9	8.3	1.1	8.6	1.1
62	9.4	9.0	1.0	9.1	1.0
66	8.9	8.9	1.0	9.0	1.0
71	9.7	9.0	0.9	9.0	0.9
77	8.9	8.6	1.0	8.9	1.0
79	11.1	9.7	0.9	10.6	1.0
84	8.7	8.6	1.0	9.3	1.1
88	9.7	9.1	0.9	9.6	1.0
92	9.1	9.0	1.0	9.7	1.1
96	8.6	8.6	1.0	9.1	1.1
100	10.6	9.6	0.9	11.9	1.1
Mean	8.4	8.3	1.0	8.5	1.0
SD (c)	1.5	1.2	0.1	1.5	0.1
CV (d)	17.9	14.5	10.0	17.6	10.0

(a) Grams of feed consumed per animal per day.
(b) Ratio of feed consumed per day for the dosed group to that for the controls.
(c) Standard deviation.
(d) (Standard Deviation/Mean) x 100.

Table H4. Feed Consumption by Female Mice Receiving C. I. Solvent Yellow 14

Week	Control GRAMS FEED/ DAY(a)	Low GRAMS FEED/ DAY(a)	Low LOW/ CONTROL (b)	High GRAMS FEED/ DAY(a)	High HIGH/ CONTROL (b)
1	7.4	7.3	1.0	7.0	0.9
4	7.4	7.0	0.9	7.7	1.0
9	2.1	1.9	0.9	1.7	0.8
13	4.9	2.4	0.5	4.7	1.0
18	8.0	7.9	1.0	7.4	0.9
22	7.6	8.9	1.2	7.7	1.0
26	8.1	8.1	1.0	7.9	1.0
32	8.0	7.4	0.9	8.3	1.0
36	8.3	8.3	1.0	8.1	1.0
41	8.0	8.1	1.0	7.7	1.0
45	8.4	7.1	0.8	8.1	1.0
49	8.0	8.1	1.0	8.3	1.0
53	8.1	8.0	1.0	7.4	0.9
57	8.3	8.6	1.0	8.4	1.0
61	8.6	8.1	0.9	8.3	1.0
65	8.4	8.3	1.0	8.7	1.0
70	8.7	8.6	1.0	9.4	1.1
76	8.4	8.3	1.0	8.4	1.0
78	10.3	10.4	1.0	9.9	1.0
83	9.1	8.3	0.9	7.9	0.9
87	9.0	9.3	1.0	8.3	0.9
91	9.3	9.3	1.0	8.7	0.9
95	10.7	9.0	0.8	9.0	0.8
99	11.1	10.4	0.9	10.3	0.9
Mean	8.2	7.9	1.0	7.9	1.0
SD (c)	1.8	2.0	0.1	1.7	0.1
CV (d)	22.0	25.3	10.0	21.5	10.0

(a) Grams of feed consumed per animal per day.
(b) Ratio of feed consumed per day for the dosed group to that for the controls.
(c) Standard deviation.
(d) (Standard Deviation/Mean) x 100.

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