



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

LA File *Perchloroethylene*
O'Connor

job

June 11, 1985

National Institutes of Health
National Institute of
Environmental Health Sciences
P.O. Box 12233
Research Triangle Park, N.C. 27709

Mr. Gerald A. Emison
Director
Office of Air Quality Planning
and Standards
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

HEALTH AND
TO: SCIENCE COMM.
FROM: P. CAMMER/HSIA
DATE: 7/18/85

Dear Mr. Emison:

This is in response to your letter of May 20 to Dr. Canter in which you requested information on the NTP studies of perchloroethylene (tetrachloroethylene) and trichloroethylene.

The draft technical report on the NTP inhalation toxicology and carcinogenesis studies of perchloroethylene in rats and mice is currently being revised. The TRTP staff reviewed and evaluated the data on June 4, and these interpretations are being placed into the draft Technical Report. In these studies rats were exposed to 0, 200 and 400 ppm of the chemical, and mice were exposed to 0, 100 and 200 ppm. Increased incidences of liver tumors were noted in male and female mice. The results of the rat portion of the study indicates an association with an increase in mononuclear cell leukemia. The draft Technical Report is scheduled for peer review by the Technical Reports Review Subcommittee of the NTP Board of Scientific Counselors on August 14 in Research Triangle Park, N.C. A copy of the draft report will be sent to you when it becomes available. Meanwhile, the appendix containing the statistical analyses is enclosed.

The NTP has also conducted toxicology and carcinogenesis studies of perchloroethylene (tetrachloroethylene) by the gavage route in four strains of rats and in the B6C3F1 mouse. The histopathology has been completed for these studies, which were performed at Gulf South Research Institute. The doses utilized were 0, 375, and 750 mg/kg body weight per day of perchloroethylene for the rats and 0, 25, 100 and 200 mg/kg body weight per day for the mice. Due to problems encountered in certain of the Gulf South studies, the Program has decided to perform audits of the data from all of the studies conducted by that laboratory for the NTP. No decision will be made on the reporting of the perchloroethylene gavage studies until we have a more comprehensive assessment of the quality of the data generated by Gulf South.

With respect to trichloroethylene, the NTP has completed toxicology and carcinogenesis studies of the chemical by the gavage route in F344 rats and B6C3F1 mice. The draft report of these studies was peer reviewed in September, 1982, and a final Technical Report is currently in preparation;

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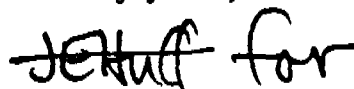
data audits have been completed recently, and this information will be added to the Report before printing and distribution. When this report becomes available, a copy will be sent to you. The tumor analysis tables are enclosed.

The NTP has also conducted toxicology and carcinogenesis studies of trichloroethylene in four strains of rats by the gavage route at doses of 0, 500, and 1000 mg/kg body weight per day. The histopathology portion of these studies has been completed, as well as an audit of the data from the studies. Currently the draft Technical Report is being prepared. The peer review of this report has been scheduled tentatively for the fall of this year or the first of next year. For your use a set of analysis tables are enclosed.

Letters were not sent on the preliminary results from the perchloroethylene or the trichloroethylene studies as were sent to Dr. John Moore and Dr. Laurence Rosenstein of EPA on methylene chloride. The main reason for this is that the NTP sends out notifications on those studies in which the preliminary findings are highly significant, both biologically and statistically. Since the preliminary results from the perchloroethylene and trichloroethylene studies did not appear as unique as those from the methylene chloride studies, we did not consider an early notification in either of these cases. For example, we do expect liver tumors in mice from these short chain aliphatic hydrocarbons, and did not consider these as being unusual enough to send a notice of preliminary findings. This class of chemicals also seems to induce an effect on rat kidneys, albeit a low yet consistent increase across studies.

Please let me know if I can provide further information on perchloroethylene and trichloroethylene, or on other chemicals of concern to your Program. You or one of your staff may wish to attend this open-to-the-public Peer Review meeting. Contact Dr. L. Hart (FTS 629-3971) for more information.

Sincerely yours,



Ernest E. McConnell, D.V.M.
Acting Director, Toxicology
Research & Testing Program

Enclosure

cc:
Dr. Rall
Dr. Canter
Dr. Mennear
Dr. Rosenstein

SL 035600



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

20 MAY 1985

Dr. Dorothy Canter
Assistant to the Director
National Toxicology Program
National Institute of Health
Bethesda, Maryland 20205

Dear Dr. Canter:

This is to inform you of the status of the EPA regulatory program on the solvents perchloroethylene (tetrachloroethylene) and trichloroethylene and to request information on the status of the NTP studies on these chemicals.

In response to a Congressional commitment, EPA is in the late stages of regulatory decision making on these solvents. At this time, the studies available to assess the carcinogenicity of these chemicals are few and controversial, with only one study demonstrating a positive carcinogenic response in test animals as a result of exposure to perchloroethylene. More recent studies conducted by NTP may therefore be very pertinent to our policy recommendations.

It is our understanding that a new study on perchloroethylene is nearing completion, with peer review expected late this summer. We would appreciate a status report on this and other NTP studies on perchloroethylene and trichloroethylene, with preliminary results if available, and a schedule of the review process. A letter similar to the one sent July 26, 1984 from you to Dr. Laurence Rosenstein on the preliminary results of the NTP study on methylene chloride would satisfy our information needs. As we expect to review our recommendations with the Deputy Administrator in mid-June, we would appreciate receiving a response by June 7.

Thank you for your help in providing us with the most current information for consideration in regulatory decision making. Please call David Patrick at FTS 629-5645 if you have any questions.

Sincerely,

A handwritten signature in dark ink, appearing to read "Gerald A. Emison", is written over a horizontal line.

Gerald A. Emison
Director
Office of Air Quality Planning
and Standards

cc: Dr. McConnell (NTP)
Dr. Mennear (NTP)
Dr. Rosenstein (TS-778)

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APPENDIX E

ANALYSES OF PRIMARY TUMORS IN RATS AND MICE IN THE TWO-YEAR INHALATION STUDIES OF TETRACHLOROETHYLENE

TABLE E1. ANALYSIS OF PRIMARY TUMORS IN MALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE

	Control	200 ppm	400 ppm
Skin: Keratoacanthoma			
Overall Rates (a)	3/50 (6%)	1/50 (2%)	0/50 (0%)
Adjusted Rates (b)	10.1%	5.0%	0.0%
Terminal Rates (c)	1/23 (4%)	1/20 (5%)	0/12 (0%)
Week of First Observation	89	104	
Life Table Tests (d)	P=0.125N	P=0.368N	P=0.231N
Incidental Tumor Tests (d)	P=0.071N	P=0.329N	P=0.114N
Cochran-Armitage Trend Test (d)	P=0.060N		
Fisher Exact Test (d)		P=0.309N	P=0.121N
Skin: Squamous Cell Papilloma or Carcinoma			
Overall Rates (a)	3/50 (6%)	1/50 (2%)	0/50 (0%)
Adjusted Rates (b)	10.0%	5.0%	0.0%
Terminal Rates (c)	1/23 (4%)	1/20 (5%)	0/12 (0%)
Week of First Observation	95	104	
Life Table Tests (d)	P=0.112N	P=0.362N	P=0.200N
Incidental Tumor Tests (d)	P=0.081N	P=0.367N	P=0.130N
Cochran-Armitage Trend Test (d)	P=0.060N		
Fisher Exact Test (d)		P=0.309N	P=0.121N
Subcutaneous Tissue: Fibroma			
Overall Rates (a)	3/50 (6%)	(e) 1/50 (2%)	4/50 (8%)
Adjusted Rates (b)	9.1%	3.0%	23.6%
Terminal Rates (c)	0/23 (0%)	0/20 (0%)	2/12 (17%)
Week of First Observation	98	98	99
Life Table Tests (d)	P=0.260	P=0.358N	P=0.301
Incidental Tumor Tests (d)	P=0.423	P=0.373N	P=0.484
Cochran-Armitage Trend Test (d)	P=0.412		
Fisher Exact Test (d)		P=0.309N	P=0.500
Hematopoietic System: Mononuclear Cell Leukemia			
Overall Rates (a)	28/50 (56%)	37/50 (74%)	37/50 (74%)
Adjusted Rates (b)	64.6%	80.1%	90.8%
Terminal Rates (c)	9/23 (39%)	11/20 (55%)	9/12 (75%)
Week of First Observation	66	53	68
Life Table Tests (d)	P=0.004	P=0.046	P=0.004
Incidental Tumor Tests (d)	P=0.097	P=0.023	P=0.104
Cochran-Armitage Trend Test (d)	P=0.034		
Fisher Exact Test (d)		P=0.046	P=0.046
Oral Cavity: Squamous Cell Papilloma or Carcinoma			
Overall Rates (a)	1/50 (2%)	1/50 (2%)	3/50 (6%)
Adjusted Rates (b)	2.7%	5.0%	10.8%
Terminal Rates (c)	0/23 (0%)	1/20 (5%)	0/12 (0%)
Week of First Observation	97	104	77
Life Table Tests (d)	P=0.133	P=0.732	P=0.232
Incidental Tumor Tests (d)	P=0.241	P=0.723	P=0.428
Cochran-Armitage Trend Test (d)	P=0.202		
Fisher Exact Test (d)		P=0.753	P=0.309
Liver: Neoplastic Nodule			
Overall Rates (a)	4/50 (8%)	7/50 (14%)	4/49 (8%)
Adjusted Rates (b)	17.4%	30.6%	30.8%
Terminal Rates (c)	4/23 (17%)	5/20 (25%)	3/12 (25%)
Week of First Observation	104	91	103
Life Table Tests (d)	P=0.192	P=0.177	P=0.267
Incidental Tumor Tests (d)	P=0.285	P=0.195	P=0.330
Cochran-Armitage Trend Test (d)	P=0.553		
Fisher Exact Test (d)		P=0.262	P=0.631

TABLE E1. ANALYSIS OF PRIMARY TUMORS IN MALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	200 ppm	400 ppm
Liver: Neoplastic Nodule or Hepatocellular Carcinoma			
Overall Rates (a)	4/50 (8%)	7/50 (14%)	5/49 (10%)
Adjusted Rates (b)	17.4%	30.6%	32.3%
Terminal Rates (c)	4/23 (17%)	5/20 (25%)	3/12 (25%)
Week of First Observation	104	91	83
Life Table Tests (d)	P=0.117	P=0.177	P=0.168
Incidental Tumor Tests (d)	P=0.201	P=0.195	P=0.243
Cochran-Armitage Trend Test (d)	P=0.422		
Fisher Exact Test (d)		P=0.262	P=0.487
Kidney: Tubular Cell Adenoma			
Overall Rates (a)	1/49 (2%)	3/49 (6%)	2/50 (4%)
Adjusted Rates (b)	4.3%	10.8%	12.7%
Terminal Rates (c)	1/23 (4%)	1/20 (5%)	1/12 (8%)
Week of First Observation	104	91	102
Life Table Tests (d)	P=0.242	P=0.259	P=0.316
Incidental Tumor Tests (d)	P=0.350	P=0.296	P=0.376
Cochran-Armitage Trend Test (d)	P=0.407		
Fisher Exact Test (d)		P=0.309	P=0.508
Kidney: Tubular Cell Adenoma or Adenocarcinoma			
Overall Rates (a)	1/49 (2%)	(f) 3/49 (6%)	4/50 (8%)
Adjusted Rates (b)	4.3%	10.8%	22.4%
Terminal Rates (c)	1/23 (4%)	1/20 (5%)	2/12 (17%)
Week of First Observation	104	91	83
Life Table Tests (d)	P=0.054	P=0.259	P=0.070
Incidental Tumor Tests (d)	P=0.107	P=0.296	P=0.114
Cochran-Armitage Trend Test (d)	P=0.138		
Fisher Exact Test (d)		P=0.309	P=0.187
Pituitary Gland: Adenoma			
Overall Rates (a)	17/47 (36%)	12/47 (26%)	16/48 (33%)
Adjusted Rates (b)	49.2%	50.9%	48.9%
Terminal Rates (c)	7/23 (30%)	9/20 (45%)	1/12 (8%)
Week of First Observation	90	98	73
Life Table Tests (d)	P=0.185	P=0.357N	P=0.238
Incidental Tumor Tests (d)	P=0.484N	P=0.293N	P=0.335N
Cochran-Armitage Trend Test (d)	P=0.429N		
Fisher Exact Test (d)		P=0.186N	P=0.470N
Pituitary Gland: Carcinoma			
Overall Rates (a)	3/47 (6%)	2/47 (4%)	2/48 (4%)
Adjusted Rates (b)	9.6%	7.3%	7.4%
Terminal Rates (c)	0/23 (0%)	1/20 (5%)	0/12 (0%)
Week of First Observation	99	86	85
Life Table Tests (d)	P=0.566N	P=0.575N	P=0.657N
Incidental Tumor Tests (d)	P=0.308N	P=0.514N	P=0.376N
Cochran-Armitage Trend Test (d)	P=0.397N		
Fisher Exact Test (d)		P=0.500N	P=0.490N
Pituitary Gland: Adenoma or Carcinoma			
Overall Rates (a)	20/47 (43%)	14/47 (30%)	18/48 (38%)
Adjusted Rates (b)	54.2%	56.5%	53.6%
Terminal Rates (c)	7/23 (30%)	10/20 (50%)	1/12 (8%)
Week of First Observation	90	86	73
Life Table Tests (d)	P=0.20N	P=0.326N	P=0.259
Incidental Tumor Tests (d)	P=0.352N	P=0.233N	P=0.210N
Cochran-Armitage Trend Test (d)	P=0.346N		
Fisher Exact Test (d)		P=0.142N	P=0.385N

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TABLE E1. ANALYSIS OF PRIMARY TUMORS IN MALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	200 ppm	400 ppm
Adrenal Gland: Pheochromocytoma			
Overall Rates (a)	22/49 (45%)	21/49 (43%)	23/49 (47%)
Adjusted Rates (b)	64.7%	70.0%	78.0%
Terminal Rates (c)	12/23 (52%)	12/20 (60%)	7/12 (58%)
Week of First Observation	89	82	77
Life Table Tests (d)	P=0.041	P=0.420	P=0.049
Incidental Tumor Tests (d)	P=0.293	P=0.488	P=0.356
Cochran-Armitage Trend Test (d)	P=0.460		
Fisher Exact Test (d)		P=0.500N	P=0.500
Adrenal Gland: Pheochromocytoma or Malignant Pheochromocytoma			
Overall Rates (a)	22/49 (45%)	21/49 (43%)	24/49 (49%)
Adjusted Rates (b)	64.7%	70.0%	82.4%
Terminal Rates (c)	12/23 (52%)	12/20 (60%)	8/12 (67%)
Week of First Observation	89	82	77
Life Table Tests (d)	P=0.025	P=0.420	P=0.030
Incidental Tumor Tests (d)	P=0.212	P=0.488	P=0.259
Cochran-Armitage Trend Test (d)	P=0.380		
Fisher Exact Test (d)		P=0.500N	P=0.420
Thyroid Gland: C-Cell Adenoma			
Overall Rates (a)	3/47 (6%)	3/48 (6%)	4/46 (9%)
Adjusted Rates (b)	11.5%	12.0%	26.7%
Terminal Rates (c)	2/23 (9%)	1/20 (5%)	2/12 (17%)
Week of First Observation	99	99	102
Life Table Tests (d)	P=0.196	P=0.599	P=0.225
Incidental Tumor Tests (d)	P=0.329	P=0.614	P=0.357
Cochran-Armitage Trend Test (d)	P=0.409		
Fisher Exact Test (d)		P=0.651N	P=0.488
Thyroid Gland: C-Cell Carcinoma			
Overall Rates (a)	4/47 (9%)	6/48 (13%)	0/46 (0%)
Adjusted Rates (b)	16.4%	24.0%	0.0%
Terminal Rates (c)	3/23 (13%)	3/20 (15%)	0/12 (0%)
Week of First Observation	103	98	
Life Table Tests (d)	P=0.236N	P=0.288	P=0.176N
Incidental Tumor Tests (d)	P=0.139N	P=0.300	P=0.124N
Cochran-Armitage Trend Test (d)	P=0.083N		
Fisher Exact Test (d)		P=0.384	P=0.061N
Thyroid Gland: C-Cell Adenoma or Carcinoma			
Overall Rates (a)	7/47 (15%)	9/48 (19%)	4/46 (9%)
Adjusted Rates (b)	27.0%	33.7%	26.7%
Terminal Rates (c)	5/23 (22%)	4/20 (20%)	2/12 (17%)
Week of First Observation	99	98	102
Life Table Tests (d)	P=0.516	P=0.289	P=0.613
Incidental Tumor Tests (d)	P=0.373N	P=0.300	P=0.464N
Cochran-Armitage Trend Test (d)	P=0.242N		
Fisher Exact Test (d)		P=0.410	P=0.274N
Pancreatic Islets: Islet Cell Adenoma			
Overall Rates (a)	3/43 (7%)	2/46 (4%)	1/46 (2%)
Adjusted Rates (b)	13.6%	8.2%	3.1%
Terminal Rates (c)	3/22 (14%)	1/20 (5%)	0/12 (0%)
Week of First Observation	104	99	95
Life Table Tests (d)	P=0.375N	P=0.546N	P=0.496N
Incidental Tumor Tests (d)	P=0.297N	P=0.542N	P=0.438N
Cochran-Armitage Trend Test (d)	P=0.200N		
Fisher Exact Test (d)		P=0.468N	P=0.283N

TABLE E1. ANALYSIS OF PRIMARY TUMORS IN MALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	200 ppm	400 ppm
Preputial Gland: Adenoma			
Overall Rates (a)	1/50 (2%)	3/50 (6%)	3/50 (6%)
Adjusted Rates (b)	4.3%	11.2%	19.8%
Terminal Rates (c)	1/23 (4%)	1/20 (5%)	2/12 (17%)
Week of First Observation	104	87	99
Life Table Tests (d)	P=0.107	P=0.255	P=0.137
Incidental Tumor Tests (d)	P=0.170	P=0.285	P=0.164
Cochran-Armitage Trend Test (d)	P=0.238		
Fisher Exact Test (d)		P=0.309	P=0.309
Preputial Gland: Carcinoma			
Overall Rates (a)	2/50 (4%)	2/50 (4%)	3/50 (6%)
Adjusted Rates (b)	8.0%	10.0%	15.0%
Terminal Rates (c)	1/23 (4%)	2/20 (10%)	1/12 (8%)
Week of First Observation	103	104	86
Life Table Tests (d)	P=0.205	P=0.637	P=0.285
Incidental Tumor Tests (d)	P=0.318	P=0.638	P=0.467
Cochran-Armitage Trend Test (d)	P=0.406		
Fisher Exact Test (d)		P=0.691	P=0.500
Preputial Gland: Adenoma or Carcinoma			
Overall Rates (a)	3/50 (6%)	5/50 (10%)	6/50 (12%)
Adjusted Rates (b)	12.2%	20.6%	33.0%
Terminal Rates (c)	2/23 (9%)	3/20 (15%)	3/12 (25%)
Week of First Observation	103	87	86
Life Table Tests (d)	P=0.047	P=0.277	P=0.063
Incidental Tumor Tests (d)	P=0.112	P=0.299	P=0.139
Cochran-Armitage Trend Test (d)	P=0.195		
Fisher Exact Test (d)		P=0.357	P=0.243
Testis: Interstitial Cell Tumor			
Overall Rates (a)	35/50 (70%)	39/49 (80%)	41/50 (82%)
Adjusted Rates (b)	91.4%	97.5%	100.0%
Terminal Rates (c)	20/23 (87%)	19/20 (95%)	12/12 (100%)
Week of First Observation	69	82	68
Life Table Tests (d)	P<0.001	P=0.093	P=0.001
Incidental Tumor Tests (d)	P=0.012	P=0.047	P=0.024
Cochran-Armitage Trend Test (d)	P=0.095		
Fisher Exact Test (d)		P=0.193	P=0.121
Brain: Glioma			
Overall Rates (a)	1/50 (2%)	0/50 (0%)	4/50 (8%)
Adjusted Rates (b)	4.3%	0.0%	17.3%
Terminal Rates (c)	1/23 (4%)	0/20 (0%)	0/12 (0%)
Week of First Observation	104		88
Life Table Tests (d)	P=0.039	P=0.528N	P=0.083
Incidental Tumor Tests (d)	P=0.103	P=0.528N	P=0.207
Cochran-Armitage Trend Test (d)	P=0.082		
Fisher Exact Test (d)		P=0.500N	P=0.181
All Sites: Mesothelioma			
Overall Rates (a)	2/50 (4%)	1/50 (2%)	3/50 (6%)
Adjusted Rates (b)	6.3%	4.8%	15.3%
Terminal Rates (c)	1/23 (4%)	0/20 (0%)	1/12 (8%)
Week of First Observation	69	103	91
Life Table Tests (d)	P=0.254	P=0.548N	P=0.342
Incidental Tumor Tests (d)	P=0.422	P=0.461N	P=0.509
Cochran-Armitage Trend Test (d)	P=0.399		
Fisher Exact Test (d)		P=0.500N	P=0.500

TABLE E1. ANALYSIS OF PRIMARY TUMORS IN MALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

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- (a) Number of tumor-bearing animals/number of animals examined at the site
(b) Kaplan-Meier estimated tumor incidences at the end of the study after adjusting for intercurrent mortality
(c) Observed tumor incidence at terminal kill
(d) Beneath the control incidence are the P values associated with the trend test. Beneath the dosed group incidence are the P values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as nonfatal. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence in a dosed group is indicated by (N).
(e) A fibrosarcoma was also present in this animal.
(f) A nephroblastoma and a lipoma were also observed in this group.

TABLE E2. ANALYSIS OF PRIMARY TUMORS IN FEMALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE

	Control	200 ppm	400 ppm
Hematopoietic System: Mononuclear Cell Leukemia			
Overall Rates (a)	18/50 (36%)	30/50 (60%)	29/50 (58%)
Adjusted Rates (b)	53.8%	71.4%	66.3%
Terminal Rates (c)	9/23 (39%)	10/21 (48%)	10/24 (42%)
Week of First Observation	84	60	76
Life Table Tests (d)	P=0.053	P=0.023	P=0.053
Incidental Tumor Tests (d)	P=0.012	P=0.013	P=0.014
Cochran-Armitage Trend Test (d)	P=0.018		
Fisher Exact Test (d)		P=0.014	P=0.022
Pituitary Gland: Adenoma			
Overall Rates (a)	19/50 (38%)	21/48 (44%)	20/50 (40%)
Adjusted Rates (b)	55.6%	63.7%	60.9%
Terminal Rates (c)	9/23 (39%)	10/20 (50%)	12/24 (50%)
Week of First Observation	59	60	76
Life Table Tests (d)	P=0.471	P=0.304	P=0.514
Incidental Tumor Tests (d)	P=0.479	P=0.345	P=0.513
Cochran-Armitage Trend Test (d)	P=0.459		
Fisher Exact Test (d)		P=0.354	P=0.500
Pituitary Gland: Carcinoma			
Overall Rates (a)	4/50 (8%)	2/48 (4%)	3/50 (6%)
Adjusted Rates (b)	13.9%	5.6%	10.5%
Terminal Rates (c)	2/23 (9%)	0/20 (0%)	2/24 (8%)
Week of First Observation	87	90	85
Life Table Tests (d)	P=0.422N	P=0.376N	P=0.494N
Incidental Tumor Tests (d)	P=0.458N	P=0.357N	P=0.533N
Cochran-Armitage Trend Test (d)	P=0.417N		
Fisher Exact Test (d)		P=0.359N	P=0.500N
Pituitary Gland: Adenoma or Carcinoma			
Overall Rates (a)	23/50 (46%)	23/48 (48%)	23/50 (46%)
Adjusted Rates (b)	64.1%	65.8%	68.2%
Terminal Rates (c)	11/23 (48%)	10/20 (50%)	14/24 (58%)
Week of First Observation	59	60	76
Life Table Tests (d)	P=0.529N	P=0.426	P=0.554N
Incidental Tumor Tests (d)	P=0.539	P=0.493	P=0.575
Cochran-Armitage Trend Test (d)	P=0.540		
Fisher Exact Test (d)		P=0.505	P=0.579
Adrenal Gland: Pheochromocytoma or Malignant Pheochromocytoma			
Overall Rates (a)	1/50 (2%)	0/49 (0%)	3/47 (6%)
Adjusted Rates (b)	4.3%	0.0%	11.4%
Terminal Rates (c)	1/23 (4%)	0/21 (0%)	2/23 (9%)
Week of First Observation	104		95
Life Table Tests (d)	P=0.176	P=0.518N	P=0.300
Incidental Tumor Tests (d)	P=0.171	P=0.518N	P=0.292
Cochran-Armitage Trend Test (d)	P=0.162		
Fisher Exact Test (d)		P=0.505N	P=0.285
Thyroid Gland: C-Cell Adenoma			
Overall Rates (a)	3/46 (7%)	1/48 (2%)	3/46 (7%)
Adjusted Rates (b)	9.3%	4.8%	9.8%
Terminal Rates (c)	0/22 (0%)	1/21 (5%)	1/23 (4%)
Week of First Observation	89	104	89
Life Table Tests (d)	P=0.587	P=0.331N	P=0.650
Incidental Tumor Tests (d)	P=0.511	P=0.311N	P=0.547
Cochran-Armitage Trend Test (d)	P=0.595		
Fisher Exact Test (d)		P=0.292N	P=0.662

SL 03560

TABLE E2. ANALYSIS OF PRIMARY TUMORS IN FEMALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	200 ppm	400 ppm
Thyroid Gland: C-Cell Carcinoma			
Overall Rates (a)	1/46 (2%)	4/48 (8%)	1/46 (2%)
Adjusted Rates (b)	3.8%	15.1%	4.3%
Terminal Rates (c)	0/22 (0%)	2/21 (10%)	1/23 (4%)
Week of First Observation	103	96	104
Life Table Tests (d)	P=0.596N	P=0.168	P=0.760N
Incidental Tumor Tests (d)	P=0.560	P=0.173	P=0.737
Cochran-Armitage Trend Test (d)	P=0.602		
Fisher Exact Test (d)		P=0.194	P=0.753
Thyroid Gland: C-Cell Adenoma or Carcinoma			
Overall Rates (a)	4/46 (9%)	5/48 (10%)	4/46 (9%)
Adjusted Rates (b)	12.9%	19.6%	13.9%
Terminal Rates (c)	0/22 (0%)	3/21 (14%)	2/23 (9%)
Week of First Observation	89	96	89
Life Table Tests (d)	P=0.567	P=0.464	P=0.632
Incidental Tumor Tests (d)	P=0.479	P=0.490	P=0.525
Cochran-Armitage Trend Test (d)	P=0.571		
Fisher Exact Test (d)		P=0.527	P=0.643
Mammary Gland: Fibroadenoma			
Overall Rates (a)	7/50 (14%)	3/50 (6%)	6/50 (12%)
Adjusted Rates (b)	21.1%	10.3%	18.5%
Terminal Rates (c)	3/23 (13%)	1/21 (5%)	2/24 (8%)
Week of First Observation	87	96	77
Life Table Tests (d)	P=0.457N	P=0.194N	P=0.517N
Incidental Tumor Tests (d)	P=0.465N	P=0.158N	P=0.532N
Cochran-Armitage Trend Test (d)	P=0.436N		
Fisher Exact Test (d)		P=0.159N	P=0.500N
Mammary Gland: Adenoma or Fibroadenoma			
Overall Rates (a)	7/50 (14%)	3/50 (6%)	7/50 (14%)
Adjusted Rates (b)	21.1%	10.3%	20.8%
Terminal Rates (c)	3/23 (13%)	1/21 (5%)	2/24 (8%)
Week of First Observation	87	96	77
Life Table Tests (d)	P=0.541	P=0.194N	P=0.590
Incidental Tumor Tests (d)	P=0.528	P=0.158N	P=0.575
Cochran-Armitage Trend Test (d)	P=0.563		
Fisher Exact Test (d)		P=0.159N	P=0.613
Mammary Gland: Adenoma, Fibroadenoma or Adenocarcinoma			
Overall Rates (a)	8/50 (16%)	5/50 (10%)	7/50 (14%)
Adjusted Rates (b)	25.1%	14.4%	20.8%
Terminal Rates (c)	4/23 (17%)	1/21 (5%)	2/24 (8%)
Week of First Observation	87	73	77
Life Table Tests (d)	P=0.458N	P=0.318N	P=0.515N
Incidental Tumor Tests (d)	P=0.453N	P=0.262N	P=0.536N
Cochran-Armitage Trend Test (d)	P=0.442N		
Fisher Exact Test (d)		P=0.277N	P=0.500N
Clitoral Gland: Adenoma			
Overall Rates (a)	3/50 (6%)	1/50 (2%)	2/50 (4%)
Adjusted Rates (b)	11.3%	4.8%	8.3%
Terminal Rates (c)	2/23 (9%)	1/21 (5%)	2/24 (8%)
Week of First Observation	98	104	104
Life Table Tests (d)	P=0.392N	P=0.335N	P=0.493N
Incidental Tumor Tests (d)	P=0.395N	P=0.330N	P=0.498N
Cochran-Armitage Trend Test (d)	P=0.399N		
Fisher Exact Test (d)		P=0.309N	P=0.500N

SL 035609

TABLE E2. ANALYSIS OF PRIMARY TUMORS IN FEMALE RATS IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	200 ppm	400 ppm
Clitoral Gland: Carcinoma			
Overall Rates (a)	2/50 (4%)	3/50 (6%)	2/50 (4%)
Adjusted Rates (b)	6.4%	9.3%	8.3%
Terminal Rates (c)	1/23 (4%)	1/21 (5%)	2/24 (8%)
Week of First Observation	84	85	104
Life Table Tests (d)	P=0.588	P=0.475	P=0.691N
Incidental Tumor Tests (d)	P=0.567	P=0.510	P=0.686
Cochran-Armitage Trend Test (d)	P=0.594		
Fisher Exact Test (d)		P=0.500	P=0.691
Clitoral Gland: Adenoma or Carcinoma			
Overall Rates (a)	5/50 (10%)	4/50 (8%)	4/50 (8%)
Adjusted Rates (b)	17.4%	13.8%	16.7%
Terminal Rates (c)	3/23 (13%)	2/21 (10%)	4/24 (17%)
Week of First Observation	84	85	104
Life Table Tests (d)	P=0.427N	P=0.541N	P=0.492N
Incidental Tumor Tests (d)	P=0.447N	P=0.512N	P=0.505N
Cochran-Armitage Trend Test (d)	P=0.429N		
Fisher Exact Test (d)		P=0.500N	P=0.500N
Uterus: Endometrial Stromal Polyp			
Overall Rates (a)	5/49 (10%)	7/49 (14%)	7/50 (14%)
Adjusted Rates (b)	16.6%	23.1%	23.5%
Terminal Rates (c)	2/23 (9%)	2/21 (10%)	4/24 (17%)
Week of First Observation	96	85	88
Life Table Tests (d)	P=0.330	P=0.345	P=0.382
Incidental Tumor Tests (d)	P=0.272	P=0.343	P=0.334
Cochran-Armitage Trend Test (d)	P=0.340		
Fisher Exact Test (d)		P=0.380	P=0.394
Uterus: Endometrial Stromal Polyp or Sarcoma			
Overall Rates (a)	5/49 (10%)	9/49 (18%)	8/50 (16%)
Adjusted Rates (b)	16.6%	29.1%	27.3%
Terminal Rates (c)	2/23 (9%)	3/21 (14%)	5/24 (21%)
Week of First Observation	96	85	88
Life Table Tests (d)	P=0.250	P=0.177	P=0.283
Incidental Tumor Tests (d)	P=0.194	P=0.170	P=0.241
Cochran-Armitage Trend Test (d)	P=0.253		
Fisher Exact Test (d)		P=0.194	P=0.290

(a) Number of tumor-bearing animals/number of animals examined at the site

(b) Kaplan-Meier estimated tumor incidences at the end of the study after adjusting for intercurrent mortality

(c) Observed tumor incidence at terminal kill

(d) Beneath the control incidence are the P values associated with the trend test. Beneath the dosed group incidence are the P values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as nonfatal. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence in a dosed group is indicated by (N).

SL 035610

TABLE E3. ANALYSIS OF PRIMARY TUMORS IN MALE MICE IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE

	Control	100 ppm	200 ppm
Lung: Alveolar/Bronchiolar Adenoma			
Overall Rates (a)	3/49 (6%)	5/49 (10%)	1/50 (2%)
Adjusted Rates (b)	6.5%	18.3%	3.1%
Terminal Rates (c)	3/46 (7%)	4/25 (16%)	1/32 (3%)
Week of First Observation	104	89	104
Life Table Tests (d)	P=0.446N	P=0.110	P=0.442N
Incidental Tumor Tests (d)	P=0.378N	P=0.196	P=0.442N
Cochran-Armitage Trend Test (d)	P=0.256N		
Fisher Exact Test (d)		P=0.357	P=0.301N
Lung: Alveolar/Bronchiolar Carcinoma			
Overall Rates (a)	4/49 (8%)	1/49 (2%)	4/50 (8%)
Adjusted Rates (b)	8.7%	4.0%	12.0%
Terminal Rates (c)	4/46 (9%)	1/25 (4%)	3/32 (9%)
Week of First Observation	104	104	103
Life Table Tests (d)	P=0.390	P=0.401N	P=0.440
Incidental Tumor Tests (d)	P=0.441	P=0.401N	P=0.522
Cochran-Armitage Trend Test (d)	P=0.573N		
Fisher Exact Test (d)		P=0.181N	P=0.631N
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma			
Overall Rates (a)	6/49 (12%)	6/49 (12%)	5/50 (10%)
Adjusted Rates (b)	13.0%	22.2%	15.1%
Terminal Rates (c)	6/46 (13%)	5/25 (20%)	4/32 (13%)
Week of First Observation	104	89	103
Life Table Tests (d)	P=0.414	P=0.220	P=0.507
Incidental Tumor Tests (d)	P=0.502	P=0.335	P=0.578
Cochran-Armitage Trend Test (d)	P=0.423N		
Fisher Exact Test (d)		P=0.620	P=0.486N
Hematopoietic System: Lymphoma, All Malignant			
Overall Rates (a)	3/49 (6%)	7/50 (14%)	3/50 (6%)
Adjusted Rates (b)	6.5%	20.3%	9.4%
Terminal Rates (c)	3/46 (7%)	2/25 (8%)	3/32 (9%)
Week of First Observation	104	55	104
Life Table Tests (d)	P=0.378	P=0.043	P=0.487
Incidental Tumor Tests (d)	P=0.496N	P=0.406	P=0.487
Cochran-Armitage Trend Test (d)	P=0.558N		
Fisher Exact Test (d)		P=0.167	P=0.652N
Circulatory System: Hemangioma or Hemangiosarcoma			
Overall Rates (a)	3/49 (6%)	2/50 (4%)	2/50 (4%)
Adjusted Rates (b)	6.5%	7.7%	6.2%
Terminal Rates (c)	3/46 (7%)	1/25 (4%)	2/32 (6%)
Week of First Observation	104	102	104
Life Table Tests (d)	P=0.576N	P=0.601	P=0.662N
Incidental Tumor Tests (d)	P=0.517N	P=0.638N	P=0.662N
Cochran-Armitage Trend Test (d)	P=0.398N		
Fisher Exact Test (d)		P=0.491N	P=0.491N
Liver: Hepatocellular Adenoma			
Overall Rates (a)	11/49 (22%)	8/49 (16%)	18/50 (36%)
Adjusted Rates (b)	23.9%	29.9%	52.4%
Terminal Rates (c)	11/46 (24%)	7/25 (28%)	16/32 (50%)
Week of First Observation	104	89	73
Life Table Tests (d)	P=0.005	P=0.345	P=0.006
Incidental Tumor Tests (d,e)	P=0.009	P=0.463	P=0.013
Cochran-Armitage Trend Test (d)	P=0.073		
Fisher Exact Test (d)		P=0.305N	P=0.104

TABLE E3. ANALYSIS OF PRIMARY TUMORS IN MALE MICE IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	100 ppm	200 ppm
Liver: Hepatocellular Carcinoma			
Overall Rates (a)	7/49 (14%)	25/49 (51%)	26/50 (52%)
Adjusted Rates (b)	14.9%	58.3%	58.3%
Terminal Rates (c)	6/46 (13%)	8/25 (32%)	14/32 (44%)
Week of First Observation	98	63	60
Life Table Tests (d)	P<0.001	P<0.001	P<0.001
Incidental Tumor Tests (d,f)	P=0.002	P=0.016	P=0.001
Cochran-Armitage Trend Test (d)	P<0.001		
Fisher Exact Test (d)		P<0.001	P<0.001
Liver: Hepatocellular Adenoma or Carcinoma			
Overall Rates (a)	16/49 (33%)	31/49 (63%)	40/50 (80%)
Adjusted Rates (b)	34.0%	73.0%	86.8%
Terminal Rates (c)	15/46 (33%)	14/25 (56%)	26/32 (81%)
Week of First Observation	98	63	60
Life Table Tests (d)	P<0.001	P<0.001	P<0.001
Incidental Tumor Tests (d,g)	P<0.001	P=0.017	P<0.001
Cochran-Armitage Trend Test (d)	P<0.001		
Fisher Exact Test (d)		P=0.002	P<0.001

(a) Number of tumor-bearing animals/number of animals examined at the site

(b) Kaplan-Meier estimated tumor incidences at the end of the study after adjusting for intercurrent mortality

(c) Observed tumor incidence at terminal kill

(d) Beneath the control incidence are the P values associated with the trend test. Beneath the dosed group incidence are the P values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test, which regards these lesions as nonfatal, lacks sensitivity because the unusually good survival in the control group creates unsatisfactory comparisons in the early time intervals. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence in a dosed group is indicated by (N).

(e) P values determined with intervals of weeks 0-52 and 53-103 and week 104: 0.009, 0.438, 0.014

(f) P values determined with intervals of weeks 0-52 and 53-103 and week 104: 0.003, 0.021, 0.001

(g) P values determined with intervals of weeks 0-52 and 53-103 and week 104: <0.001, 0.020, <0.001

SL 035612

TABLE E4. ANALYSIS OF PRIMARY TUMORS IN FEMALE MICE IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE

	Control	100 ppm	200 ppm
Lung: Alveolar/Bronchiolar Adenoma			
Overall Rates (a)	4/48 (8%)	2/50 (4%)	1/50 (2%)
Adjusted Rates (b)	11.1%	6.2%	2.4%
Terminal Rates (c)	4/36 (11%)	1/31 (3%)	0/19 (0%)
Week of First Observation	104	102	85
Life Table Tests (d)	P=0.252N	P=0.403N	P=0.362N
Incidental Tumor Tests (d)	P=0.112N	P=0.396N	P=0.220N
Cochran-Armitage Trend Test (d)	P=0.108N		
Fisher Exact Test (d)		P=0.319N	P=0.168N
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma			
Overall Rates (a)	6/48 (13%)	3/50 (6%)	3/50 (6%)
Adjusted Rates (b)	16.7%	9.3%	9.5%
Terminal Rates (c)	6/36 (17%)	2/31 (6%)	1/19 (5%)
Week of First Observation	104	102	67
Life Table Tests (d)	P=0.411N	P=0.317N	P=0.524N
Incidental Tumor Tests (d)	P=0.216N	P=0.311N	P=0.339N
Cochran-Armitage Trend Test (d)	P=0.162N		
Fisher Exact Test (d)		P=0.223N	P=0.223N
Hematopoietic System: Lymphoma, All Malignant			
Overall Rates (a)	8/49 (16%)	13/50 (26%)	8/50 (16%)
Adjusted Rates (b)	19.4%	35.2%	29.4%
Terminal Rates (c)	4/36 (11%)	8/31 (26%)	4/19 (21%)
Week of First Observation	93	34	54
Life Table Tests (d)	P=0.193	P=0.104	P=0.268
Incidental Tumor Tests (d)	P=0.418N	P=0.159	P=0.485N
Cochran-Armitage Trend Test (d)	P=0.531N		
Fisher Exact Test (d)		P=0.176	P=0.590N
Circulatory System: Hemangiosarcoma			
Overall Rates (a)	1/49 (2%)	3/50 (6%)	0/50 (0%)
Adjusted Rates (b)	2.8%	9.7%	0.0%
Terminal Rates (c)	1/36 (3%)	3/31 (10%)	0/19 (0%)
Week of First Observation	104	104	
Life Table Tests (d)	P=0.576N	P=0.253	P=0.627N
Incidental Tumor Tests (d)	P=0.576N	P=0.253	P=0.627N
Cochran-Armitage Trend Test (d)	P=0.372N		
Fisher Exact Test (d)		P=0.316	P=0.495N
Circulatory System: Hemangioma or Hemangiosarcoma			
Overall Rates (a)	1/49 (2%)	3/50 (6%)	1/50 (2%)
Adjusted Rates (b)	2.8%	9.7%	5.3%
Terminal Rates (c)	1/36 (3%)	3/31 (10%)	1/19 (5%)
Week of First Observation	104	104	104
Life Table Tests (d)	P=0.386	P=0.253	P=0.613
Incidental Tumor Tests (d)	P=0.386	P=0.253	P=0.613
Cochran-Armitage Trend Test (d)	P=0.603N		
Fisher Exact Test (d)		P=0.316	P=0.748N
Liver: Hepatocellular Adenoma			
Overall Rates (a)	3/48 (6%)	6/50 (12%)	2/50 (4%)
Adjusted Rates (b)	7.5%	18.7%	6.1%
Terminal Rates (c)	1/36 (3%)	5/31 (16%)	0/19 (0%)
Week of First Observation	96	102	78
Life Table Tests (d)	P=0.479	P=0.182	P=0.641N
Incidental Tumor Tests (d)	P=0.325N	P=0.193	P=0.213N
Cochran-Armitage Trend Test (d)	P=0.401N		
Fisher Exact Test (d)		P=0.264	P=0.481N

SL 035613

TABLE E4. ANALYSIS OF PRIMARY TUMORS IN FEMALE MICE IN THE TWO-YEAR INHALATION STUDY OF TETRACHLOROETHYLENE (Continued)

	Control	100 ppm	200 ppm
Liver: Hepatocellular Carcinoma			
Overall Rates (a)	1/48 (2%)	13/50 (26%)	36/50 (72%)
Adjusted Rates (b)	2.8%	35.5%	91.7%
Terminal Rates (c)	1/36 (3%)	8/31 (26%)	16/19 (84%)
Week of First Observation	104	76	67
Life Table Tests (d)	P<0.001	P<0.001	P<0.001
Incidental Tumor Tests (d)	P<0.001	P<0.001	P<0.001
Cochran-Armitage Trend Test (d)	P<0.001		
Fisher Exact Test (d)		P<0.001	P<0.001
Liver: Hepatocellular Adenoma or Carcinoma			
Overall Rates (a)	4/48 (8%)	17/50 (34%)	38/50 (76%)
Adjusted Rates (b)	10.1%	46.7%	92.2%
Terminal Rates (c)	2/36 (6%)	12/31 (39%)	16/19 (84%)
Week of First Observation	96	76	67
Life Table Tests (d)	P<0.001	P<0.001	P<0.001
Incidental Tumor Tests (d)	P<0.001	P<0.001	P<0.001
Cochran-Armitage Trend Test (d)	P<0.001		
Fisher Exact Test (d)		P=0.002	P<0.001
Pituitary Gland: Carcinoma			
Overall Rates (a)	5/45 (11%)	3/43 (7%)	3/42 (7%)
Adjusted Rates (b)	14.7%	9.7%	15.4%
Terminal Rates (c)	5/34 (15%)	3/31 (10%)	2/17 (12%)
Week of First Observation	104	104	102
Life Table Tests (d)	P=0.549	P=0.406N	P=0.573
Incidental Tumor Tests (d)	P=0.544N	P=0.406N	P=0.645N
Cochran-Armitage Trend Test (d)	P=0.316N		
Fisher Exact Test (d)		P=0.383N	P=0.396N
Pituitary Gland: Adenoma or Carcinoma			
Overall Rates (a)	7/45 (16%)	3/43 (7%)	5/42 (12%)
Adjusted Rates (b)	19.7%	9.7%	20.5%
Terminal Rates (c)	6/34 (18%)	3/31 (10%)	2/17 (12%)
Week of First Observation	97	104	88
Life Table Tests (d)	P=0.480	P=0.200N	P=0.473
Incidental Tumor Tests (d)	P=0.387N	P=0.193N	P=0.462N
Cochran-Armitage Trend Test (d)	P=0.349N		
Fisher Exact Test (d)		P=0.176N	P=0.429N
Harderian Gland: Adenoma or Carcinoma (e)			
Overall Rates (a)	1/49 (2%)	1/50 (2%)	3/50 (6%)
Adjusted Rates (b)	2.4%	3.2%	14.3%
Terminal Rates (c)	0/36 (0%)	1/31 (3%)	2/19 (11%)
Week of First Observation	97	104	102
Life Table Tests (d)	P=0.093	P=0.726	P=0.155
Incidental Tumor Tests (d)	P=0.202	P=0.726	P=0.325
Cochran-Armitage Trend Test (d)	P=0.207		
Fisher Exact Test (d)		P=0.747N	P=0.316

(a) Number of tumor-bearing animals/number of animals examined at the site

(b) Kaplan-Meier estimated tumor incidences at the end of the study after adjusting for intercurrent mortality

(c) Observed tumor incidence at terminal kill

(d) Beneath the control incidence are the P values associated with the trend test. Beneath the dosed group incidence are the P values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as nonfatal. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence in a dosed group is indicated by (N).

(e) Includes adenoma, NOS, papillary adenoma, and papillary carcinoma

SL 035614

SL 035615

TABLE 4. ANALYSIS OF PRIMARY TUMORS IN MALE RATS (a)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Subcutaneous Tissue: Fibroma				
Tumor Rates				
Overall (b)	3/50 (6%)	4/50 (8%)	1/50 (2%)	0/49 (0%)
Adjusted (c)		10.2%	5.0%	0.0%
Terminal (d)		2/35 (6%)	1/20 (5%)	0/16 (0%)
Statistical Tests (e)				
Life Table		P=0.108N	P=0.356N	P=0.208N
Incidental Tumor Test		P=0.064N	P=0.216N	P=0.141N
Cochran-Armitage Trend Test		P=0.027N		
Fisher Exact Test			P=0.181N	P=0.061N
Skin or Subcutaneous Tissue: Fibroma				
Tumor Rates				
Overall (b)	3/50 (6%)	4/50 (8%)	1/50 (2%)	1/49 (2%)
Adjusted (c)		10.2%	5.0%	6.3%
Terminal (d)		2/35 (6%)	1/20 (5%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.318N	P=0.356N	P=0.475N
Incidental Tumor Test		P=0.238N	P=0.216N	P=0.373N
Cochran-Armitage Trend Test		P=0.104N		
Fisher Exact Test			P=0.181N	P=0.187N
Lung: Alveolar/Bronchiolar Carcinoma				
Tumor Rates				
Overall (b)	1/49 (2%)	3/50 (6%)	2/50 (4%)	2/49 (4%)
Adjusted (c)		7.6%	9.5%	10.9%
Terminal (d)		2/35 (6%)	1/20 (5%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.461	P=0.656	P=0.568
Incidental Tumor Test		P=0.583N	P=0.494N	P=0.639N
Cochran-Armitage Trend Test		P=0.415N		
Fisher Exact Test			P=0.500N	P=0.510N
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma				
Tumor Rates				
Overall (b)	1/49 (2%)	4/50 (8%)	2/50 (4%)	2/49 (4%)
Adjusted (c)		10.4%	9.5%	10.9%
Terminal (d)		3/35 (9%)	1/20 (5%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.584N	P=0.570N	P=0.669
Incidental Tumor Test		P=0.439N	P=0.368N	P=0.516N
Cochran-Armitage Trend Test		P=0.259N		
Fisher Exact Test			P=0.339N	P=0.349
Hematopoietic System: Leukemia				
Tumor Rates				
Overall (b)	11/50 (22%)	5/50 (10%)	5/50 (10%)	1/49 (2%)
Adjusted (c)		13.6%	17.9%	5.9%
Terminal (d)		4/35 (11%)	2/20 (10%)	0/16 (0%)
Statistical Tests (e)				
Life Table		P=0.394N	P=0.336	P=0.368N
Incidental Tumor Test		P=0.255N	P=0.548	P=0.309N
Cochran-Armitage Trend Test		P=0.094N		
Fisher Exact Test			P=0.630	P=0.107N

TABLE 4. ANALYSIS OF PRIMARY TUMORS IN MALE RATS (a) (Continued)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Hematopoietic System: Leukemia or Lymphoma				
Tumor Rates				
Overall (b)	12/50 (24%)	6/50 (12%)	5/50 (10%)	1/49 (2%)
Adjusted (c)		15.4%	17.9%	5.9%
Terminal (d)		4/35 (11%)	2/20 (10%)	0/16 (0%)
Statistical Tests (e)				
Life Table		P=0.287N	P=0.455	P=0.270N
Incidental Tumor Test		P=0.121N	P=0.512N	P=0.126N
Cochran-Armitage Trend Test		P=0.051N		
Fisher Exact Test			P=0.500N	P=0.059N
Kidney: Tubular-Cell Adenocarcinoma				
Tumor Rates				
Overall (b)	0/49 (0%)	0/48 (0%)	0/49 (0%)	3/49 (6%)
Adjusted (c)		0.0%	0.0%	18.8%
Terminal (d)		0/33 (0%)	0/20 (0%)	3/16 (19%)
Statistical Tests (e)				
Life Table		P=0.009	()	P=0.028
Incidental Tumor Test		P=0.009	()	P=0.028
Cochran-Armitage Trend Test		P=0.038		
Fisher Exact Test			()	P=0.125
Kidney: Tubular-Cell Adenoma or Adenocarcinoma				
Tumor Rates				
Overall (b)	0/49 (0%)	0/48 (0%)	2/49 (4%)	3/49 (6%)
Adjusted (c)		0.0%	5.6%	18.8%
Terminal (d)		0/33 (0%)	0/20 (0%)	3/16 (19%)
Statistical Tests (e)				
Life Table		P=0.019	P=0.194	P=0.028
Incidental Tumor Test		P=0.030	P=0.327	P=0.028
Cochran-Armitage Trend Test		P=0.084		
Fisher Exact Test			P=0.253	P=0.125
Pituitary: Chromophobe Adenoma				
Tumor Rates				
Overall (b)	4/39 (10%) (g)	7/42 (17%) (h)	2/35 (6%) (i)	1/26 (4%)
Adjusted (c)		21.2%	8.2%	7.7%
Terminal (d)		7/33 (21%)	1/18 (6%)	1/13 (8%)
Statistical Tests (e)				
Life Table		P=0.147N	P=0.285N	P=0.258N
Incidental Tumor Test		P=0.125N	P=0.250N	P=0.258N
Cochran-Armitage Trend Test		P=0.150N		
Fisher Exact Test			P=0.128N	P=0.111N
Adrenal: All Pheochromocytomas				
Tumor Rates				
Overall (b)	8/45 (18%)	4/45 (9%)	3/42 (7%)	1/44 (2%)
Adjusted (c)		13.3%	15.8%	3.2%
Terminal (d)		4/30 (13%)	3/19 (16%)	0/16 (0%)
Statistical Tests (e)				
Life Table		P=0.348N	P=0.571	P=0.393N
Incidental Tumor Test		P=0.270N	P=0.571	P=0.254N
Cochran-Armitage Trend Test		P=0.140N		
Fisher Exact Test			P=0.539N	P=0.187N

TABLE 4. ANALYSIS OF PRIMARY TUMORS IN MALE RATS (a) (Continued)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Thyroid: C-Cell Carcinoma				
Tumor Rates				
Overall (b)	0/44 (0%)	2/44 (5%)	3/43 (7%)	0/39 (0%)
Adjusted (c)		6.5%	15.9%	0.0%
Terminal (d)		2/31 (6%)	2/15 (13%)	0/14 (0%)
Statistical Tests (e)				
Life Table		P=0.470N	P=0.231	P=0.425N
Incidental Tumor Test		P=0.429N	P=0.281	P=0.425N
Cochran-Armitage Trend Test		P=0.232N		
Fisher Exact Test			P=0.489	P=0.278N
Thyroid: C-Cell Adenoma or Carcinoma				
Tumor Rates				
Overall (b)	5/44 (11%)	4/44 (9%)	3/43 (7%)	0/39 (0%)
Adjusted (c)		12.9%	15.9%	0.0%
Terminal (d)		4/31 (13%)	2/15 (13%)	0/14 (0%)
Statistical Tests (e)				
Life Table		P=0.224N	P=0.464	P=0.202N
Incidental Tumor Test		P=0.197N	P=0.519	P=0.202N
Cochran-Armitage Trend Test		P=0.061N		
Fisher Exact Test			P=0.513N	P=0.074N
Preputial Gland: Adenoma				
Tumor Rates				
Overall (b)	4/50 (8%)	4/50 (8%)	0/50 (0%)	1/49 (2%)
Adjusted (c)		11.4%	0.0%	6.2%
Terminal (d)		4/35 (11%)	0/20 (0%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.253N	P=0.154N	P=0.473N
Incidental Tumor Test		P=0.253N	P=0.154N	P=0.473N
Cochran-Armitage Trend Test		P=0.084N		
Fisher Exact Test			P=0.059N	P=0.187N
Preputial Gland: Adenoma or Adenocarcinoma				
Tumor Rates				
Overall (b)	4/50 (8%)	5/50 (10%)	1/50 (2%)	3/49 (6%)
Adjusted (c)		13.5%	5.0%	13.4%
Terminal (d)		4/35 (11%)	1/20 (5%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.553	P=0.254	P=0.536
Incidental Tumor Test		P=0.457N	P=0.211N	P=0.541N
Cochran-Armitage Trend Test		P=0.272N		
Fisher Exact Test			P=0.102N	P=0.369N
Testis: Interstitial-Cell Tumor				
Tumor Rates				
Overall (b)	44/47 (94%)	47/49 (96%)	47/49 (96%)	32/46 (70%)
Adjusted (c)		100.0%	100.0%	96.8%
Terminal (d)		35/35 (100%)	20/20 (100%)	14/15 (93%)
Statistical Tests (e)				
Life Table		P=0.004	P<0.001	P=0.008
Incidental Tumor Test		P=0.252N	P=0.190	P=0.594N
Cochran-Armitage Trend Test	P<0.001N			
Fisher Exact Test			P=0.691	P=0.001N

TABLE 4. ANALYSIS OF PRIMARY TUMORS IN MALE RATS (a) (Continued)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Pertoneum: Malignant Mesothelioma				
Tumor Rates				
Overall (b)	1/50 (2%)	1/50 (2%)	5/50 (10%)	0/49 (0%)
Adjusted (c)		2.9%	16.1%	0.0%
Terminal (d)		1/35 (3%)	0/20 (0%)	0/16 (0%)
Statistical Tests (e)				
Life Table		P=0.518	P=0.042	P=0.656N
Incidental Tumor Test		P=0.348N	P=0.274	P=0.656N
Cochran-Armitage Trend Test		P=0.407N		
Fisher Exact Test			P=0.102	P=0.505N
Pertoneum: All Mesotheliomas				
Tumor Rates				
Overall (b)	1/50 (2%)	1/50 (2%)	5/50 (10%)	1/49 (2%)
Adjusted (c)		2.9%	15.6%	6.3%
Terminal (d)		1/35 (3%)	0/20 (0%)	1/16 (6%)
Statistical Tests (e)				
Life Table		P=0.286	P=0.042	P=0.578
Incidental Tumor Test		P=0.583	P=0.274	P=0.578
Cochran-Armitage Trend Test		P=0.585		
Fisher Exact Test			P=0.102	P=0.747

(a) Dosed groups received doses of 500 or 1,000 mg/kg of trichloroethylene by gavage.

(b) Number of tumor bearing animals, number of animals examined at the site.

(c) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.

(d) Observed tumor incidence at terminal kill.

(e) Beneath the control incidence are the P values associated with the trend test. Beneath each dosed group incidence is the P value corresponding to the pairwise comparison between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence is indicated by (N).

(f) Not significant; no tumors were observed in dosed or control groups.

(g) Two chromophobe carcinomas, one adenoma, NOS, and one carcinoma, NOS, were also observed.

(h) One chromophobe carcinoma was also observed.

(i) One adenoma, NOS, was also observed.

TABLE 5. ANALYSIS OF PRIMARY TUMORS IN FEMALE RATS (a)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Lung: Alveolar/Bronchiolar Adenoma or Carcinoma				
Tumor Rates				
Overall (b)	0/49 (0%)	1/50 (2%)	1/49 (2%)	3/50 (6%)
Adjusted (c)		2.7%	3.0%	7.5%
Terminal (d)		1/37 (3%)	1/33 (3%)	0/26 (0%)
Statistical Tests (e)				
Life Table		P=0.151	P=0.736	P=0.246
Incidental Tumor Test		P=0.326	P=0.736	P=0.541
Cochran-Armitage Trend Test		P=0.202		
Fisher Exact Test			P=0.747	P=0.309
Hematopoietic System: Leukemia				
Tumor Rates				
Overall (b)	10/49 (20%) (f)	14/50 (28%)	4/50 (8%)	9/50 (18%)
Adjusted (c)		33.8%	10.7%	29.1%
Terminal (d)		10/37 (27%)	2/33 (6%)	6/26 (23%)
Statistical Tests (e)				
Life Table		P=0.316N	P=0.019N	P=0.446N
Incidental Tumor Test		P=0.110N	P=0.004N	P=0.182N
Cochran-Armitage Trend Test		P=0.121N		
Fisher Exact Test			P=0.009N	P=0.171N
Pituitary: Chromophobe Adenoma				
Tumor Rates				
Overall (b)	18/43 (42%)	13/37 (35%)	6/34 (18%)	6/41 (15%)
Adjusted (c)		37.5%	24.0%	22.0%
Terminal (d)		9/29 (31%)	5/23 (22%)	3/22 (14%)
Statistical Tests (e)				
Life Table		P=0.131N	P=0.135N	P=0.191N
Incidental Tumor Test		P=0.036N	P=0.075N	P=0.040N
Cochran-Armitage Trend Test		P=0.022N		
Fisher Exact Test			P=0.081N	P=0.032N
Pituitary: All Adenomas or Carcinomas				
Tumor Rates				
Overall (b)	19/43 (44%)	13/37 (35%)	8/34 (24%)	6/41 (15%)
Adjusted (c)		37.5%	30.3%	22.0%
Terminal (d)		9/29 (31%)	6/23 (26%)	3/22 (14%)
Statistical Tests (e)				
Life Table		P=0.151N	P=0.297N	P=0.191N
Incidental Tumor Test		P=0.038N	P=0.188N	P=0.040N
Cochran-Armitage Trend Test		P=0.024N		
Fisher Exact Test			P=0.209N	P=0.032N
Adrenal: Cortical Adenoma				
Tumor Rates				
Overall (b)	2/45 (4%)	1/46 (2%)	2/48 (4%)	3/47 (6%)
Adjusted (c)		3.0%	6.1%	12.0%
Terminal (d)		1/33 (3%)	2/33 (6%)	3/25 (12%)
Statistical Tests (e)				
Life Table		P=0.142	P=0.500	P=0.210
Incidental Tumor Test		P=0.142	P=0.500	P=0.210
Cochran-Armitage Trend Test	P=0.227			
Fisher Exact Test		P=0.516	P=0.317	

TABLE 5. ANALYSIS OF PRIMARY TUMORS IN FEMALE RATS (a) (Continued)

	Untreated Control	Vehicle Control	Low Dose	High Dose
Thyroid: C-Cell Adenoma				
Tumor Rates				
Overall (b)	2/36 (6%) (g)	4/41 (10%)	1/45 (2%)	1/44 (2%)
Adjusted (c)		10.9%	3.3%	4.2%
Terminal (d)		3/34 (9%)	1/30 (3%)	1/24 (4%)
Statistical Tests (e)				
Life Table		P=0.168N	P=0.214N	P=0.290N
Incidental Tumor Test		P=0.127N	P=0.168N	P=0.210N
Cochran-Armitage Trend Test		P=0.086N		
Fisher Exact Test			P=0.152N	P=0.159N
Mammary Gland: Fibroadenoma				
Tumor Rates				
Overall (b)	10/49 (20%)	9/50 (18%)	12/50 (24%)	4/50 (8%)
Adjusted (c)		22.9%	32.6%	14.5%
Terminal (d)		7/37 (19%)	9/33 (27%)	3/26 (12%)
Statistical Tests (e)				
Life Table		P=0.307N	P=0.240	P=0.285N
Incidental Tumor Test		P=0.169N	P=0.353	P=0.177N
Cochran-Armitage Trend Test		P=0.114N		
Fisher Exact Test			P=0.312	P=0.117N
Uterus: Endometrial Stromal Polyp				
Tumor Rates				
Overall (b)	10/45 (22%)	15/48 (31%)	8/48 (17%)	6/46 (13%)
Adjusted (c)		40.1%	23.1%	21.0%
Terminal (d)		13/35 (37%)	7/33 (21%)	4/25 (16%)
Statistical Tests (e)				
Life Table		P=0.074N	P=0.098N	P=0.120N
Incidental Tumor Test		P=0.035N	P=0.069N	P=0.056N
Cochran-Armitage Trend Test		P=0.019N		
Fisher Exact Test			P=0.075N	P=0.030N
Uterus: Endometrial Stromal Polyp or Sarcoma				
Tumor Rates				
Overall (b)	10/45 (22%)	15/48 (31%)	8/48 (17%)	7/46 (15%)
Adjusted (c)		40.1%	23.1%	23.5%
Terminal (d)		13/35 (37%)	7/33 (21%)	4/25 (16%)
Statistical Tests (e)				
Life Table		P=0.127N	P=0.098N	P=0.193N
Incidental Tumor Test		P=0.060N	P=0.069N	P=0.086N
Cochran-Armitage Trend Test		P=0.037N		
Fisher Exact Test			P=0.075N	P=0.055N

(a) Dosed groups received doses of 500 or 1,000 mg/kg of trichloroethylene by gavage.

(b) Number of tumor bearing animals/number of animals examined at the site.

(c) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.

(d) Observed tumor incidence at terminal kill.

(e) Beneath the control incidence are the P values associated with the trend test. Beneath each dosed group incidence is the P value corresponding to the pairwise comparison between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact test compare directly the overall incidence rates. A negative trend or lower incidence is indicated by (N).

(f) One malignant lymphoma, histiocytic type, was also observed.

(g) One C-cell carcinoma was also observed.

FINAL

#2

11/10/85

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

M3-01VM

M3-01HM

M3-01VF

M3-01HF

PAGE:

VERSION: 11/13/

RUN DATE: 03/01/

SURVIVAL AT MINIMUM	33/50 66%	16/50 32%	32/50 64%	23/50 46%
TERMINAL SACRIFICE(WEEK)	105	105	104	104

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0

ALL TOPOGRAPHIES ALL TUMORS

TUMOR RATES

OVERALL (a)	33/50 (66)	45/50 (90)	21/48 (44)	38/49 (78)
ADJUSTED (b)	69.7%	100.0%	51.4%	88.2%
TERMINAL (c)	19/33 (58)	16/16 (100)	13/32 (41)	18/23 (78)
FIRST INCIDENCE (WEEKS)	61	57	46	65

STATISTICAL TESTS (d)

LIFE TABLE		P<0.001		P<0.001
INCIDENTAL TUMOR TEST		P=0.014		P=0.003
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.004		P<0.001

LUNG NOS ALL TUMORS

TUMOR RATES

OVERALL (a)	7/49 (14)	6/50 (12)	1/48 (2)	4/48 (8)
ADJUSTED (b)	19.2%	30.0%	2.5%	14.3%
TERMINAL (c)	5/33 (15)	4/16 (25)	0/32 (0)	2/22 (9)
FIRST INCIDENCE (WEEKS)	73	84	88	85

STATISTICAL TESTS (d)

LIFE TABLE		P=0.310		P=0.132
INCIDENTAL TUMOR TEST		P=0.575		P=0.184
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.484N		P=0.181

LUNG NOS ALVEOLAR/BRONCHIOLAR ADENOMA

TUMOR RATES

OVERALL (a)	4/49 (8)	5/50 (10)	0/48 (0)	4/48 (8) ✓
ADJUSTED (b)	10.5%	27.1%	0.0%	14.3%
TERMINAL (c)	2/33 (6)	4/16 (25)	0/32 (0)	2/22 (9)
FIRST INCIDENCE (WEEKS)	73	84		85

STATISTICAL TESTS (d)

LIFE TABLE		P=0.197		P=0.040
INCIDENTAL TUMOR TEST		P=0.375		P=0.064
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.513		P=0.059

RECEIVED

MAR 22 1985

J. E. HUFF, PH.D.

SL 035622

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE
 CHDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: M3-01VM M3-01HM M3-01VF M3-01HF

PAGE:
 VERSION: 11/13/
 RUN DATE: 03/01/

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0
LUNG NOS ALVEOLAR/BRONCHIOLAR CARCINOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	3/49 (6)	1/50 (2)	1/48 (2)	0/48 (0)
ADJUSTED (b)	9.1%	4.0%	2.5%	0.0%
TERMINAL (c)	3/33 (9)	0/16 (0)	0/32 (0)	0/22 (0)
FIRST INCIDENCE (WEEKS)	105	94	88	
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.553N		P=0.505N
INCIDENTAL TUMOR TEST		P=0.407N		P=0.500N
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.301N		P=0.500N
LUNG NOS ALVEOLAR/BRONCHIOLAR ADENOMA ALVEOLAR/BRONCHIOLAR CARCINOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	7/49 (14)	6/50 (12)	1/48 (2)	4/48 (8) ✓
ADJUSTED (b)	19.2%	30.0%	2.5%	14.3%
TERMINAL (c)	5/33 (15)	4/16 (25)	0/32 (0)	2/22 (9)
FIRST INCIDENCE (WEEKS)	73	84	88	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.310		P=0.132
INCIDENTAL TUMOR TEST		P=0.575		P=0.184
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.484N		P=0.181
HEMATOPOIETIC SYSTEM ALL TUMORS				
<u>TUMOR RATES</u>				
OVERALL (a)	13/50 (26)	13/50 (26)	8/48 (17)	14/49 (29)
ADJUSTED (b)	28.5%	45.7%	20.5%	39.3%
TERMINAL (c)	3/33 (9)	3/16 (19)	3/32 (9)	3/23 (13)
FIRST INCIDENCE (WEEKS)	61	77	62	66
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.226		P=0.056
INCIDENTAL TUMOR TEST		P=0.176N		P=0.442
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.590N		P=0.123

SL 035623

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: M3-01VM M3-01HM M3-01VF M3-01HF

PAGE:
 VERSION: 11/13/1
 RUN DATE: 03/01/1

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0
HEMATOPOIETIC SYSTEM ALL LYMPHOMAS				
<u>TUMOR RATES</u>				
OVERALL (a)	11/50 (22)	13/50 (26)	7/48 (15)	13/49 (27)
ADJUSTED (b)	25.2%	45.7%	18.8%	38.0%
TERMINAL (c)	3/33 (9)	3/16 (19)	3/32 (9)	3/23 (13)
FIRST INCIDENCE (WEEKS)	66	77	79	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.116		P=0.047
INCIDENTAL TUMOR TEST		P=0.398N		P=0.331
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.408		P=0.114
HEMATOPOIETIC SYSTEM MALIGNANT LYMPHOMA, NOS				
<u>TUMOR RATES</u>				
OVERALL (a)	1/50 (2)	3/50 (6)	2/48 (4)	2/49 (4)
ADJUSTED (b)	2.1%	11.9%	5.9%	6.5%
TERMINAL (c)	0/33 (0)	1/16 (6)	1/32 (3)	0/23 (0)
FIRST INCIDENCE (WEEKS)	66	88	101	90
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.217		P=0.601
INCIDENTAL TUMOR TEST		P=0.476		P=0.559N
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.309		P=0.684N
HEMATOPOIETIC SYSTEM MALIG. LYMPHOMA, UNDIFFER-TYPE				
<u>TUMOR RATES</u>				
OVERALL (a)	3/50 (6)	5/50 (10)	1/48 (2)	3/49 (6)
ADJUSTED (b)	6.7%	17.4%	2.2%	10.1%
TERMINAL (c)	0/33 (0)	1/16 (6)	0/32 (0)	0/23 (0)
FIRST INCIDENCE (WEEKS)	73	77	79	90
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.258		P=0.252
INCIDENTAL TUMOR TEST		P=0.590		P=0.476
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.357		P=0.316

SL 035624

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: M3-01VM M3-01HM M3-01VF M3-01HF

PAGE:
 VERSION: 11/13
 RUN DATE: 03/01

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0
HEMATOPOIETIC SYSTEM MALIG.LYMPHOMA, LYMPHOCYTIC TYPE				
<u>TUMOR RATES</u>				
OVERALL (a)	2/50 (4)	2/50 (4)	0/48 (0)	3/49 (6)
ADJUSTED (b)	5.1%	11.1%	0.0%	9.6%
TERMINAL (c)	0/33 (0)	0/16 (0)	0/32 (0)	0/23 (0)
FIRST INCIDENCE (WEEKS)	86	102		96
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.504		P=0.096
INCIDENTAL TUMOR TEST		P=0.341N		P=0.324
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.691N		P=0.125
HEMATOPOIETIC SYSTEM MALIG.LYMPHOMA, HISTIOCYTIC TYPE				
<u>TUMOR RATES</u>				
OVERALL (a)	2/50 (4)	0/50 (0)	1/48 (2)	3/49 (6)
ADJUSTED (b)	5.1%	0.0%	2.8%	10.9%
TERMINAL (c)	1/33 (3)	0/16 (0)	0/32 (0)	2/23 (9)
FIRST INCIDENCE (WEEKS)	66		99	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.322N		P=0.228
INCIDENTAL TUMOR TEST		P=0.291N		P=0.323
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.248N		P=0.316
HEMATOPOIETIC SYSTEM MALIGNANT LYMPHOMA, MIXED TYPE				
<u>TUMOR RATES</u>				
OVERALL (a)	3/50 (6)	3/50 (6)	3/48 (6)	2/49 (4)
ADJUSTED (b)	8.8%	14.6%	9.1%	7.5%
TERMINAL (c)	2/33 (6)	1/16 (6)	2/32 (6)	1/23 (4)
FIRST INCIDENCE (WEEKS)	103	97	103	98
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.348		P=0.636N
INCIDENTAL TUMOR TEST		P=0.663N		P=0.424N
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.661N		P=0.490N

SL 035625

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE

CADS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: M3-01VM M3-01HM M3-01VF M3-01HF

PAGE:
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RUN DATE: 03/01/

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0
HEMATOPOIETIC SYSTEM ALL LYMPHOMAS ALL LEUKEMIAS				
<u>TUMOR RATES</u>				
OVERALL (a)	11/50 (22)	13/50 (26)	7/48 (15)	14/49 (29)
ADJUSTED (b)	25.2%	45.7%	18.8%	39.3%
TERMINAL (c)	3/33 (9)	3/16 (19)	3/32 (9)	3/23 (13)
FIRST INCIDENCE (WEEKS)	66	77	79	66
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.116		P=0.032
INCIDENTAL TUMOR TEST		P=0.398N		P=0.287
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.408		P=0.076
LIVER NOS HEPATOCELLULAR ADENOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	7/48 (15)	14/50 (28)	4/48 (8)	16/49 (33)
ADJUSTED (b)	20.6%	53.1%	12.5%	55.6%
TERMINAL (c)	6/33 (18)	6/16 (38)	4/32 (13)	11/23 (48)
FIRST INCIDENCE (WEEKS)	103	69	105	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.002		P<0.001
INCIDENTAL TUMOR TEST		P=0.048		P=0.001
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.084		P=0.003
LIVER NOS HEPATOCELLULAR CARCINOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	8/48 (17)	31/50 (62)	2/48 (4)	13/49 (27)
ADJUSTED (b)	22.1%	92.9%	6.2%	43.9%
TERMINAL (c)	6/33 (18)	14/16 (88)	2/32 (6)	8/23 (35)
FIRST INCIDENCE (WEEKS)	75	57	106	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P<0.001		P<0.001
INCIDENTAL TUMOR TEST		P<0.001		P=0.002
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P<0.001		P=0.002

SL 035626

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE

BDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

M3-01VM

M3-01HM

M3-01VF

M3-01HF

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RUN DATE: 03/01/8

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0
LIVER NOS				
HEPATOCELLULAR ADENOMA				
HEPATOCELLULAR CARCINOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	14/48 (29)	39/50 (78)	6/48 (13)	22/49 (45)
ADJUSTED (b)	38.4%	100.0%	18.7%	69.7%
TERMINAL (c)	11/33 (33)	16/16 (100)	6/32 (19)	14/23 (61)
FIRST INCIDENCE (WEEKS)	75	57	105	85
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P<0.001		P<0.001
INCIDENTAL TUMOR TEST		P<0.001		P<0.001
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P<0.001		P<0.001
PITUITARY				
CHROMOPHOBE ADENOMA				
<u>TUMOR RATES</u>				
OVERALL (a)	0/18 (0)	0/22 (0)	3/27 (11)	0/28 (0)
ADJUSTED (b)	0.0%	0.0%	13.1%	0.0%
TERMINAL (c)	0/12 (0)	0/5 (0)	2/19 (11)	0/14 (0)
FIRST INCIDENCE (WEEKS)			101	
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		(a)		P=0.183N
INCIDENTAL TUMOR TEST		(a)		P=0.081N
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		(a)		P=0.112N
ADRENAL GLAND				
ADENOMA, NOS				
<u>TUMOR RATES</u>				
OVERALL (a)	0/50 (0)	2/50 (4)	0/48 (0)	3/49 (6)
ADJUSTED (b)	0.0%	5.5%	0.0%	8.3%
TERMINAL (c)	0/33 (0)	0/16 (0)	0/32 (0)	0/23 (0)
FIRST INCIDENCE (WEEKS)		77		90
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE		P=0.215		P=0.114
INCIDENTAL TUMOR TEST		P=0.399		P=0.171
COCHRAN-ARMITAGE TREND				
FISHER EXACT TESTS		P=0.247		P=0.125

SL 035627

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR MICE
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: M3-01VM M3-01HM M3-01VF M3-01HF

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 RUN DATE: 03/01/

	MALE		FEMALE	
DOSE IN GM/KG	0.0	1.0	0.0	1.0

- a) Number of tumor-bearing animals/number of animals examined at the site (percent).
- b) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.
- c) Observed tumor incidence at terminal kill.
- e) Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact tests compare directly the overall incidence rates. A negative trend is indicated by N.
- e) Differences not significant; no tumors observed in dosed group or control group.

SL 035628

FINAL

#1

MARSHALL RATS

RECEIVED 11/13/85

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDs CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

SURVIVAL AT MINIMUM	32/50 64%	26/50 52%	12/50 24%	6/50 12%	31/50 62%	30/50 60%	12/50 24%	10/50 20%
TERMINAL SACRIFICE(WEEK)	104	104	104	104	104	104	104	104
	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

ALL TOPOGRAPHIES ALL TUMORS

TUMOR RATES								
OVERALL (a)	38/49 (78)	37/50 (74)	23/50 (46)	32/50 (64)	46/50 (92)	47/50 (94)	31/50 (62)	22/48 (46)
ADJUSTED (b)	97.4%	97.3%	100.0%	100.0%	97.9%	97.9%	93.3%	94.9%
TERMINAL (c)	31/32 (97)	25/26 (96)	12/12 (100)	6/6 (100)	30/31 (97)	29/30 (97)	10/12 (83)	9/10 (90)
FIRST INCIDENCE (WEEKS)	73	42	50	32	55	51	66	28
STATISTICAL TESTS (d)								
LIFE TABLE	P<0.001		P=0.003	P<0.001	P=0.091		P=0.045	P=0.156
INCIDENTAL TUMOR TEST	P=0.007	P<0.001	P=0.050	P<0.001	P=0.005N	P=0.097	P=0.052	P=0.157
COCHRAN-ARMITAGE TREND		P=0.002	P=0.092	P=0.024		P=0.002N	P=0.043N	P=0.010N
FISHER EXACT TESTS	P=0.102N	P=0.178N	P=0.061	P=0.008	P<0.001N	P<0.001N	P=0.013N	P=0.003N
			P=0.001N	P=0.104N			P=0.001N	P<0.001N
			P=0.004N	P=0.194N			P<0.001N	P<0.001N

KIDNEY NOS ALL TUMORS

TUMOR RATES								
OVERALL (a)	2/49 (4)	0/49 (0)	1/50 (2)	1/47 (2)	1/49 (2)	0/50 (0)	2/48 (4)	3/44 (7)
ADJUSTED (b)	6.2%	0.0%	4.0%	9.1%	3.2%	0.0%	14.1%	22.6%
TERMINAL (c)	2/32 (6)	0/26 (0)	0/12 (0)	0/6 (0)	1/31 (3)	0/30 (0)	1/12 (8)	2/10 (20)
FIRST INCIDENCE (WEEKS)	105		57	87	105		100	64
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.462		P=0.698	P=0.522	P=0.029		P=0.216	P=0.059
INCIDENTAL TUMOR TEST	P=0.416N	P=0.181	P=0.387	P=0.276		P=0.008	P=0.086	P=0.019
COCHRAN-ARMITAGE TREND		P=0.331	P=0.593N	P=0.742N	P=0.050	P=0.015	P=0.340	P=0.109
FISHER EXACT TESTS	P=0.390N	P=0.322	P=0.612	P=0.398	P=0.189	P=0.064	P=0.156	P=0.046
			P=0.492N	P=0.516N			P=0.492	P=0.269
			P=0.505	P=0.489			P=0.237	P=0.099

SL 035629

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBD5 CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PITUITARY CHROMOPHOBE ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/36 (3)	2/21 (10)	0/25 (0)	0/28 (0)	22/42 (52)	18/45 (40)	8/38 (21)	6/42 (14)
ADJUSTED (b)	3.8%	16.8%	0.0%	0.0%	64.4%	51.7%	36.3%	39.2%
TERMINAL (c)	1/26 (4)	1/7 (14)	0/11 (0)	0/3 (0)	15/26 (58)	11/26 (42)	2/11 (18)	2/9 (22)
FIRST INCIDENCE (WEEKS)	105	88			69	78	73	68
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.548N		P=0.671N	P=0.904N	P=0.171N		P=0.243N	P=0.257N
INCIDENTAL TUMOR TEST	P=0.548N	P=0.194N	P=0.285N	P=0.482N	P=0.003N	P=0.412N	P=0.482N	P=0.506N
COCHRAN-ARMITAGE TREND		P=0.138N	P=0.671N	P=0.904N		P=0.036N	P=0.019N	P=0.013N
FISHER EXACT TESTS	P=0.312N	P=0.067N	P=0.410N	P=0.329N	P<0.001N	P=0.004N	P=0.097N	P=0.079N
			P=0.590N	P=0.563N			P=0.004N	P<0.001N
			P=0.203N	P=0.179N			P=0.052N	P=0.007N
ADRENAL CORTICAL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	0/48 (0)	2/48 (4)	0/43 (0)	0/43 (0)	4/47 (9)	5/49 (10)	2/47 (4)	3/43 (7)
ADJUSTED (b)	0.0%	6.4%	0.0%	0.0%	12.1%	15.9%	13.4%	18.8%
TERMINAL (c)	0/31 (0)	1/26 (4)	0/11 (0)	0/6 (0)	3/31 (10)	4/29 (14)	1/12 (8)	1/10 (10)
FIRST INCIDENCE (WEEKS)		81			89	91	97	66
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	P=0.266N	(a)	(a)	P=0.244		P=0.616	P=0.310
INCIDENTAL TUMOR TEST	(a)		P=0.473N	P=0.516N	P=0.483	P=0.346	P=0.620N	P=0.394
COCHRAN-ARMITAGE TREND		P=0.258N	(a)	(a)		P=0.551	P=0.562N	P=0.621
FISHER EXACT TESTS	(a)	P=0.109N	P=0.671N	P=0.460N	P=0.460N	P=0.333N	P=0.514N	P=0.649N
			(a)	(a)			P=0.339N	P=0.550N
			P=0.276N	P=0.276N			P=0.236N	P=0.433N

SL 035630

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ADRENAL PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	19/48 (40)	21/48 (44)	12/43 (28)	11/43 (26)	30/47 (64)	39/49 (80)	15/47 (32)	9/43 (21)
ADJUSTED (b)	55.6%	69.1%	84.8%	89.4%	74.8%	92.7%	76.5%	67.0%
TERMINAL (c)	16/31 (52)	17/26 (65)	9/11 (82)	5/6 (83)	21/31 (68)	26/29 (90)	8/12 (67)	6/10 (60)
FIRST INCIDENCE (WEEKS)	89	79	65	57	61	68	68	82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.001		P=0.033	P=0.002	P=0.419N		P=0.396	P=0.397N
INCIDENTAL TUMOR TEST	P=0.107	P=0.014	P=0.147	P=0.021	P=0.019N	P=0.050N	P=0.263N	P=0.067N
COCHRAN-ARMITAGE TREND		P=0.095	P=0.048	P=0.190		P<0.001N	P=0.090N	P=0.026N
FISHER EXACT TESTS	P=0.090N	P=0.040N	P=0.119	P=0.127	P<0.001N	P<0.001N	P=0.002N	P<0.001N
			P=0.171N	P=0.116N			P=0.002N	P<0.001N
			P=0.088N	P=0.055N			P<0.001N	P<0.001N
ADRENAL PHEOCHROMOCYTOMA, MALIGNANT								
<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	5/48 (10)	1/43 (2)	2/43 (5)	4/47 (9)	4/49 (8)	0/47 (0)	1/43 (2)
ADJUSTED (b)	12.1%	16.2%	9.1%	21.4%	12.9%	13.8%	0.0%	10.0%
TERMINAL (c)	3/31 (10)	2/26 (8)	1/11 (9)	0/6 (0)	4/31 (13)	4/29 (14)	0/12 (0)	1/10 (10)
FIRST INCIDENCE (WEEKS)	91	85	104	86	105	104		104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.298		P=0.589N	P=0.329	P=0.379N		P=0.238N	P=0.621N
INCIDENTAL TUMOR TEST	P=0.467N	P=0.517	P=0.420N	P=0.524	P=0.379N	P=0.354N	P=0.222N	P=0.593N
COCHRAN-ARMITAGE TREND		P=0.440N	P=0.703N	P=0.557N		P=0.354N	P=0.238N	P=0.621N
FISHER EXACT TESTS	P=0.280N	P=0.165N	P=0.695	P=0.500N	P=0.093N	P=0.100N	P=0.222N	P=0.593N
			P=0.217N	P=0.393N			P=0.059N	P=0.210N
			P=0.129N	P=0.266N			P=0.064N	P=0.224N

SL 035631

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL ADRENAL SITES PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	19/48 (40)	21/48 (44)	12/43 (28)	11/43 (26)	38/47 (64)	39/49 (80)	15/47 (32)	9/43 (21)
ADJUSTED (b)	55.6%	49.1%	84.8%	89.4%	74.8%	92.7%	76.5%	67.0%
TERMINAL (c)	16/31 (52)	17/26 (65)	9/11 (82)	5/6 (83)	21/31 (68)	26/29 (90)	8/12 (67)	6/10 (60)
FIRST INCIDENCE (WEEKS)	89	79	65	57	61	68	68	82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.001		P=0.033	P=0.002	P=0.419N		P=0.396	P=0.397N
INCIDENTAL TUMOR TEST	P=0.107	P=0.014	P=0.147	P=0.021	P=0.019N	P=0.050N	P=0.263N	P=0.067N
COCHRAN-ARMITAGE TREND	P=0.090N	P=0.095	P=0.048	P=0.190	P=0.019N	P<0.001N	P=0.090N	P=0.026N
FISHER EXACT TESTS		P=0.040N	P=0.119	P=0.127	P<0.001N	P<0.001N	P=0.002N	P<0.001N
			P=0.171N	P=0.116N			P=0.002N	P<0.001N
			P=0.088N	P=0.055N			P<0.001N	P<0.001N

ALL ADRENAL SITES
PHEOCHROMOCYTOMA, MALIGNANT

<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	5/48 (10)	1/43 (2)	2/43 (5)	4/47 (9)	4/49 (8)	0/47 (0)	1/43 (2)
ADJUSTED (b)	12.1%	16.2%	9.1%	21.4%	12.9%	13.8%	0.0%	10.0%
TERMINAL (c)	3/31 (10)	2/26 (8)	1/11 (9)	0/6 (0)	4/31 (13)	4/29 (14)	0/12 (0)	1/10 (10)
FIRST INCIDENCE (WEEKS)	91	85	104	86	105	104		104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.298		P=0.589N	P=0.329	P=0.379N		P=0.238N	P=0.621N
INCIDENTAL TUMOR TEST	P=0.467N	P=0.517	P=0.420N	P=0.524	P=0.379N	P=0.354N	P=0.222N	P=0.593N
COCHRAN-ARMITAGE TREND	P=0.280N	P=0.440N	P=0.703N	P=0.557N	P=0.379N	P=0.354N	P=0.238N	P=0.621N
FISHER EXACT TESTS		P=0.165N	P=0.695	P=0.500N	P=0.093N	P=0.100N	P=0.222N	P=0.593N
			P=0.217N	P=0.393N			P=0.059N	P=0.210N
			P=0.129N	P=0.266N			P=0.064N	P=0.224N

SL 035632

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RB-01UM

RB-01VM

RB-01LM

RB-01HM

RB-01UF

RB-01VF

RB-01LF

RB-01HF

PAGE: 5

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL ADRENAL SITES								
PHEOCHROMOCYTOMA								
PHEOCHROMOCYTOMA, MALIGNANT								
<u>TUMOR RATES</u>								
OVERALL (a)	23/48 (48)	25/48 (52)	12/43 (28)	12/43 (28)	32/47 (68)	40/49 (82)	15/47 (32)	9/43 (21)
ADJUSTED (b)	65.4%	75.1%	84.8%	90.9%	79.8%	95.1%	76.5%	67.0%
TERMINAL (c)	19/31 (61)	18/26 (69)	9/11 (82)	5/6 (83)	23/31 (74)	27/29 (93)	8/12 (67)	6/10 (60)
FIRST INCIDENCE (WEEKS)	89	79	65	57	61	68	68	82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.002		P=0.105	P=0.002	P=0.314N		P=0.489	P=0.306N
INCIDENTAL TUMOR TEST	P=0.224	P=0.035	P=0.353	P=0.037		P=0.036N	P=0.222N	P=0.050N
COCHRAN-ARMITAGE TREND		P=0.239	P=0.114	P=0.309	P=0.007N		P=0.048N	P=0.012N
FISHER EXACT TESTS	P=0.027N	P=0.010N	P=0.158	P=0.288	P<0.001N	P<0.001N	P<0.001N	P<0.001N
			P=0.040N	P=0.040N			P<0.001N	P<0.001N
			P=0.016N	P=0.016N			P<0.001N	P<0.001N
THYROID								
C-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	8/41 (20)	4/41 (10)	5/41 (12)	2/40 (5)	12/48 (25)	10/43 (23)	5/46 (11)	4/43 (9)
ADJUSTED (b)	25.0%	14.0%	41.7%	40.0%	37.3%	31.8%	45.5%	26.2%
TERMINAL (c)	8/32 (25)	3/25 (12)	5/12 (42)	2/5 (40)	11/31 (35)	9/30 (30)	5/11 (45)	2/10 (20)
FIRST INCIDENCE (WEEKS)	105	55	104	104	95	92	104	57
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.210		P=0.242	P=0.437	P=0.560N		P=0.513	P=0.583N
INCIDENTAL TUMOR TEST	P=0.210	P=0.129	P=0.113	P=0.385		P=0.432	P=0.394	P=0.561
COCHRAN-ARMITAGE TREND		P=0.172	P=0.242	P=0.437	P=0.444N		P=0.589	P=0.418N
FISHER EXACT TESTS	P=0.034N	P=0.292N	P=0.153	P=0.513	P=0.025N	P=0.552N	P=0.423	P=0.473N
			P=0.273N	P=0.048N			P=0.065N	P=0.044N
			P=0.500	P=0.350N			P=0.101N	P=0.071N

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDs CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

PAGE: 6
VERSION: 11/13/84
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
THYROID C-CELL CARCINOMA								
TUMOR RATES								
OVERALL (a)	4/41 (10)	1/41 (2)	0/41 (0)	1/40 (3)	1/48 (2)	0/43 (0)	2/46 (4)	1/43 (2)
ADJUSTED (b)	12.5%	4.0%	0.0%	12.5%	3.2%	0.0%	8.5%	10.0%
TERMINAL (c)	4/32 (13)	1/25 (4)	0/12 (0)	0/5 (0)	1/31 (3)	0/30 (0)	0/11 (0)	1/10 (10)
FIRST INCIDENCE (WEEKS)	105	105		100	105		79	104
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.547N		P=0.246N	P=0.621	P=0.287		P=0.271	P=0.492
INCIDENTAL TUMOR TEST	P=0.463N	P=0.361	P=0.646N	P=0.431	P=0.391	P=0.139	P=0.129	P=0.282
COCHRAN-ARMITAGE TREND		P=0.574	P=0.246N	P=0.716		P=0.249	P=0.435	P=0.492
FISHER EXACT TESTS	P=0.084N	P=0.664	P=0.646N	P=0.668	P=0.587	P=0.359	P=0.331	P=0.282
			P=0.058N	P=0.188N			P=0.484	P=0.724
			P=0.500N	P=0.747			P=0.264	P=0.500
THYROID C-CELL ADENOMA C-CELL CARCINOMA								
TUMOR RATES								
OVERALL (a)	12/41 (29)	5/41 (12)	5/41 (12)	3/40 (8)	13/48 (27)	10/43 (23)	7/46 (15)	5/43 (12)
ADJUSTED (b)	37.5%	17.9%	41.7%	47.5%	40.4%	31.8%	50.1%	35.5%
TERMINAL (c)	12/32 (38)	4/25 (16)	5/12 (42)	2/5 (40)	12/31 (39)	9/30 (30)	5/11 (45)	3/10 (30)
FIRST INCIDENCE (WEEKS)	105	55	104	100	95	92	79	57
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.277		P=0.537	P=0.353	P=0.408		P=0.282	P=0.542
INCIDENTAL TUMOR TEST	P=0.329	P=0.078	P=0.178	P=0.206	P=0.561N	P=0.219	P=0.150	P=0.364
COCHRAN-ARMITAGE TREND		P=0.170	P=0.537	P=0.437		P=0.403	P=0.427	P=0.549N
FISHER EXACT TESTS	P=0.006N	P=0.308N	P=0.228	P=0.424	P=0.037N	P=0.096N	P=0.249	P=0.593
			P=0.050N	P=0.011N			P=0.124N	P=0.055N
			P=0.631N	P=0.370N			P=0.244N	P=0.124N

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
MAMMARY GLAND ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/49 (0)	0/50 (0)	0/50 (0)	0/50 (0)	8/50 (16)	14/50 (28)	2/50 (4)	4/48 (8)
ADJUSTED (b)	0.0%	0.0%	0.0%	0.0%	22.2%	36.8%	16.7%	24.2%
TERMINAL (c)	0/32 (0)	0/26 (0)	0/12 (0)	0/6 (0)	5/31 (16)	8/30 (27)	2/12 (17)	0/10 (0)
FIRST INCIDENCE (WEEKS)					55	78	104	78
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	(a)	(a)	(a)	P=0.477	P=0.228N	P=0.321N	P=0.474
INCIDENTAL TUMOR TEST	(a)	(a)	(a)	(a)	P=0.355N	P=0.032N	P=0.076N	P=0.429N
COCHRAN-ARMITAGE TREND	(a)	(a)	(a)	(a)	P=0.127N	P=0.003N	P=0.170N	P=0.396N
FISHER EXACT TESTS			(a)	(a)			P=0.009N	P=0.062N
			(a)	(a)			P=0.046N	P=0.199N
			(a)	(a)			P=0.001N	P=0.011N
MAMMARY GLAND FIBROADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	0/49 (0)	0/50 (0)	0/50 (0)	0/50 (0)	7/50 (14)	11/50 (22)	2/50 (4)	4/48 (8)
ADJUSTED (b)	0.0%	0.0%	0.0%	0.0%	19.8%	28.2%	16.7%	24.2%
TERMINAL (c)	0/32 (0)	0/26 (0)	0/12 (0)	0/6 (0)	5/31 (16)	5/30 (17)	2/12 (17)	0/10 (0)
FIRST INCIDENCE (WEEKS)					55	78	104	78
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	(a)	(a)	(a)	P=0.386	P=0.418N	P=0.404N	P=0.405
INCIDENTAL TUMOR TEST	(a)	(a)	(a)	(a)	P=0.481N	P=0.087N	P=0.159N	P=0.601N
COCHRAN-ARMITAGE TREND	(a)	(a)	(a)	(a)	P=0.203N	P=0.023N	P=0.302N	P=0.496N
FISHER EXACT TESTS			(a)	(a)			P=0.024N	P=0.120N
			(a)	(a)			P=0.080N	P=0.286N
			(a)	(a)			P=0.008N	P=0.054N

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: RB-01UM

RB-01VM

RB-01LM

RB-01HM

RB-01UF

RB-01VF

RB-01LF

RB-01HF

PAGE: 8
 VERSION: 11/13/84T
 RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
MAMMARY GLAND ADENOCARCINOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/49 (0)	0/50 (0)	0/50 (0)	0/50 (0)	1/50 (2)	3/50 (6)	0/50 (0)	0/48 (0)
ADJUSTED (b)	0.0%	0.0%	0.0%	0.0%	3.0%	10.0%	0.0%	0.0%
TERMINAL (c)	0/32 (0)	0/26 (0)	0/12 (0)	0/6 (0)	0/31 (0)	3/30 (10)	0/12 (0)	0/10 (0)
FIRST INCIDENCE (WEEKS)					100	104		
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	(a)	(a)	(a)	P=0.432N	P=0.157N	P=0.644N	P=0.718N
INCIDENTAL TUMOR TEST	(a)	(a)	(a)	(a)	P=0.286N	P=0.157N	P=0.383N	P=0.602N
COCHRAN-ARMITAGE TREND	(a)	(a)	(a)	(a)	P=0.274N	P=0.039N	P=0.320N	P=0.366N
FISHER EXACT TESTS			(a)	(a)			P=0.500N	P=0.510N
			(a)	(a)			P=0.122N	P=0.129N

TESTIS NOS INTERSTITIAL-CELL TUMOR

<u>TUMOR RATES</u>				
OVERALL (a)	16/46 (35)	17/46 (37)	21/48 (44)	31/48 (65)
ADJUSTED (b)	46.9%	55.7%	95.1%	100.0%
TERMINAL (c)	14/32 (44)	13/26 (50)	11/12 (92)	6/6 (100)
FIRST INCIDENCE (WEEKS)	98	79	50	32
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE	P<0.001	P<0.001	P<0.001	P<0.001
INCIDENTAL TUMOR TEST	P<0.001	P<0.001	P<0.001	P<0.001
COCHRAN-ARMITAGE TREND	P=0.003	P=0.005	P=0.249	P=0.003
FISHER EXACT TESTS			P=0.323	P=0.007

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDD CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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VERSION: 11/13/84T
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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

TESTICULAR SITES
INTERSTITIAL-CELL TUMOR

TUMOR RATES				
OVERALL (a)	16/46 (35)	17/46 (37)	21/48 (44)	31/48 (65)
ADJUSTED (b)	46.9%	55.7%	95.1%	100.0%
TERMINAL (c)	14/32 (44)	13/26 (50)	11/12 (92)	6/6 (100)
FIRST INCIDENCE (WEEKS)	98	79	50	32
STATISTICAL TESTS (d)				
LIFE TABLE	P<0.001	P<0.001	P<0.001	P<0.001
INCIDENTAL TUMOR TEST	P<0.001	P<0.001	P<0.001	P<0.001
COCHRAN-ARMITAGE TREND	P=0.003	P=0.005	P<0.001	P<0.001
FISHER EXACT TESTS			P=0.249 P=0.323	P=0.003 P=0.007

TESTICULAR SITES
INTERSTITIAL-CELL TUMOR
INTERSTITIAL-CELL TUMOR, MALIGNANT

TUMOR RATES				
OVERALL (a)	16/46 (35)	17/46 (37)	21/48 (44)	32/48 (67)
ADJUSTED (b)	46.9%	55.7%	95.1%	100.0%
TERMINAL (c)	14/32 (44)	13/26 (50)	11/12 (92)	6/6 (100)
FIRST INCIDENCE (WEEKS)	98	79	50	32
STATISTICAL TESTS (d)				
LIFE TABLE	P<0.001	P<0.001	P<0.001	P<0.001
INCIDENTAL TUMOR TEST	P<0.001	P<0.001	P<0.001	P<0.001
COCHRAN-ARMITAGE TREND	P=0.001	P=0.003	P<0.001	P<0.001
FISHER EXACT TESTS			P=0.249 P=0.323	P=0.002 P=0.004

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RB-01UM RB-01VM RB-01LM RB-01HM RB-01UF RB-01VF RB-01LF RB-01HF

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VERSION: 11/13/84
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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
UTERUS NOS ENDOMETRIAL STROMAL POLYP								
<u>TUMOR RATES</u>								
OVERALL (a)					6/47 (13)	3/50 (6)	5/45 (11)	2/44 (5)
ADJUSTED (b)					17.0%	8.2%	23.2%	20.0%
TERMINAL (c)					3/30 (10)	1/30 (3)	2/12 (17)	2/10 (20)
FIRST INCIDENCE (WEEKS)					79	86	66	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE					P=0.552		P=0.339	P=0.627N
INCIDENTAL TUMOR TEST					P=0.289N	P=0.244	P=0.107	P=0.409
COCHRAN-ARMITAGE TREND						P=0.533	P=0.574N	P=0.460N
FISHER EXACT TESTS					P=0.126N	P=0.489N	P=0.386	P=0.505
							P=0.531N	P=0.156N
							P=0.299	P=0.561N
UTERUS NOS ENDOMETRIAL STROMAL POLYP ENDOMETRIAL STROMAL SARCOMA								
<u>TUMOR RATES</u>								
OVERALL (a)					6/47 (13)	3/50 (6)	5/45 (11)	2/44 (5)
ADJUSTED (b)					17.0%	8.2%	23.2%	20.0%
TERMINAL (c)					3/30 (10)	1/30 (3)	2/12 (17)	2/10 (20)
FIRST INCIDENCE (WEEKS)					79	86	66	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE					P=0.552		P=0.339	P=0.627N
INCIDENTAL TUMOR TEST					P=0.289N	P=0.244	P=0.107	P=0.409
COCHRAN-ARMITAGE TREND						P=0.533	P=0.574N	P=0.460N
FISHER EXACT TESTS					P=0.126N	P=0.489N	P=0.386	P=0.505
							P=0.531N	P=0.156N
							P=0.299	P=0.561N

Maximal Rats (540)

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RB-01UM

RB-01VM

RB-01LM

RB-01HM

RB-01UF

RB-01VF

RB-01LF

RB-01HF

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VERSION: 11/13/84

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL TOPOGRAPHIES								
MESOTHELIOMA, NOS								
MESOTHELIOMA, MALIGNANT								
TUMOR RATES								
OVERALL (a)	2/49 (4)	2/50 (4)	2/50 (4)	3/50 (6)	0/50 (0)	0/50 (0)	0/50 (0)	0/48 (0)
ADJUSTED (b)	5.5%	6.0%	16.7%	24.5%	0.0%	0.0%	0.0%	0.0%
TERMINAL (c)	1/32 (3)	0/26 (0)	2/12 (17)	0/6 (0)	0/31 (0)	0/30 (0)	0/12 (0)	0/10 (0)
FIRST INCIDENCE (WEEKS)	73	79	104	63				
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.040		P=0.307	P=0.094	(a)		(a)	(a)
		P=0.063	P=0.356	P=0.127		(a)	(a)	(a)
INCIDENTAL TUMOR TEST	P=0.299		P=0.544	P=0.673	(a)		(a)	(a)
		P=0.244	P=0.090	P=0.496		(a)	(a)	(a)
COCHRAN-ARMITAGE TREND	P=0.415	P=0.406			(a)	(a)		
FISHER EXACT TESTS			P=0.684N	P=0.509			(a)	(a)
			P=0.691N	P=0.500			(a)	(a)

- a) Number of tumor-bearing animals/number of animals examined at the site (percent).
b) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.
c) Observed tumor incidence at terminal kill.
d) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact tests compare directly the overall incidence rates. A negative trend is indicated by N.
e) Differences not significant; no tumors observed in dosed group or control group.

SL 035639

FINAL #2

August (28807) Rats

RECEIVED MAR 04 1985

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 1
VERSION: 11/13/84T
RUN DATE: 02/20/85

	RI-01UM	RI-01VM	RI-01LM	RI-01HM	RI-01UF	RI-01VF	RI-01LF	RI-01NF
SURVIVAL AT MINIMUM	24/50 48%	21/50 42%	13/50 26%	16/49 33%	26/50 52%	23/50 46%	26/50 52%	25/50 50%
TERMINAL SACRIFICE(WEEK)	104	104	104	104	104	104	104	104
	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL TOPOGRAPHIES ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	43/50 (86)	45/50 (90)	32/50 (64)	27/49 (55)	45/50 (90)	43/50 (86)	35/50 (70)	29/50 (58)
ADJUSTED (b)	100.0%	100.0%	97.0%	100.0%	97.8%	93.4%	94.6%	93.4%
TERMINAL (c)	24/24 (100)	21/21 (100)	12/13 (92)	16/16 (100)	25/26 (96)	20/23 (87)	24/26 (92)	23/25 (92)
FIRST INCIDENCE (WEEKS)	62	50	65	66	58	48	78	15
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.523N	P=0.278N	P=0.142 P=0.325	P=0.478N P=0.243N	P=0.015N	P=0.012N	P=0.092N P=0.070N	P=0.024N P=0.023N
INCIDENTAL TUMOR TEST	P=0.173N	P=0.035N	P=0.646 P=0.258N	P=0.239N P=0.044N	P=0.077N	P=0.155N P=0.001N	P=0.123N P=0.230N	P=0.121N P=0.195N
COCHRAN-ARMITAGE TREND FISHER EXACT TESTS	P<0.001N	P<0.001N	P=0.010N P=0.003N	P<0.001N P<0.001N	P<0.001N		P=0.012N P=0.045N	P<0.001N P=0.002N
HEMATOPOIETIC SYSTEM ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	1/50 (2)	1/50 (2)	2/49 (4)	0/50 (0)	1/50 (2)	2/50 (4)	5/50 (10)
ADJUSTED (b)	7.2%	3.0%	6.2%	10.7%	0.0%	2.2%	6.9%	18.2%
TERMINAL (c)	0/24 (0)	0/21 (0)	0/13 (0)	1/16 (6)	0/26 (0)	0/23 (0)	1/26 (4)	3/25 (12)
FIRST INCIDENCE (WEEKS)	66	88	100	87		65	100	82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.586N	P=0.257	P=0.458N P=0.668	P=0.666 P=0.361	P=0.011	P=0.046	P=0.243 P=0.509	P=0.022 P=0.078
INCIDENTAL TUMOR TEST	P=0.528N	P=0.202	P=0.312N P=0.692	P=0.620N P=0.338	P=0.003	P=0.019 P=0.060	P=0.191 P=0.480	P=0.012 P=0.059
COCHRAN-ARMITAGE TREND FISHER EXACT TESTS	P=0.407N	P=0.372	P=0.309N P=0.753N	P=0.510N P=0.492	P=0.016		P=0.247 P=0.500	P=0.028 P=0.102

SL 035640

II

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: RI-01UM RI-01VM RI-01LM RI-01HM RI-01UF RI-01VF RI-01LF RI-01HF

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 VERSION: 11/13/84
 RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
HEMATOPOIETIC SYSTEM ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	2/50 (4)	1/50 (2)	0/50 (0)	0/49 (0)	0/50 (0)	1/50 (2)	0/50 (0)	5/50 (10)
ADJUSTED (b)	5.1%	3.0%	0.0%	0.0%	0.0%	2.2%	0.0%	18.2%
TERMINAL (c)	0/24 (0)	0/21 (0)	0/13 (0)	0/16 (0)	0/26 (0)	0/23 (0)	0/26 (0)	3/25 (12)
FIRST INCIDENCE (WEEKS)	70	88				65		82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.156N		P=0.328N	P=0.346N	P=0.004		(a)	P=0.022
INCIDENTAL TUMOR TEST	P=0.106N	P=0.344N	P=0.572N	P=0.600N	P=0.002	P=0.027	P=0.523N	P=0.078
COCHRAN-ARMITAGE TREND		P=0.323N	P=0.215N	P=0.288N		P=0.020	(a)	P=0.012
FISHER EXACT TESTS	P=0.097N	P=0.272N	P=0.473N	P=0.612N	P=0.006	P=0.037	P=0.469N	P=0.059
			P=0.248N	P=0.252N			(a)	P=0.028
			P=0.500N	P=0.505N			P=0.500N	P=0.102
HEMATOPOIETIC SYSTEM LEUKEMIA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	2/50 (4)	0/50 (0)	0/50 (0)	0/49 (0)	0/50 (0)	1/50 (2)	0/50 (0)	3/50 (6)
ADJUSTED (b)	5.1%	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%	12.8%
TERMINAL (c)	0/24 (0)	0/21 (0)	0/13 (0)	0/16 (0)	0/26 (0)	0/23 (0)	0/26 (0)	3/25 (12)
FIRST INCIDENCE (WEEKS)	70					65		104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.156N		P=0.328N	P=0.346N	P=0.034		(a)	P=0.112
INCIDENTAL TUMOR TEST	P=0.106N	(a)	(a)	(a)	P=0.034	P=0.165	P=0.523N	P=0.292
COCHRAN-ARMITAGE TREND		(a)	P=0.215N	P=0.288N		P=0.211	(a)	P=0.112
FISHER EXACT TESTS	P=0.097N	(a)	(a)	(a)	P=0.037	P=0.176	P=0.469N	P=0.365
			P=0.248N	P=0.252N			(a)	P=0.121
			(a)	(a)			P=0.500N	P=0.309

SL 035641

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS: RI-01UM RI-01VM RI-01LM RI-01HM RI-01UF RI-01VF RI-01LF RI-01HF

PAGE: 3
 VERSION: 11/13/84
 RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
HEMATOPOIETIC SYSTEM ALL LYMPHOMAS ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	1/50 (2)	1/50 (2)	2/49 (4)	0/50 (0)	1/50 (2)	2/50 (4)	5/50 (10)
ADJUSTED (b)	7.2%	3.0%	6.2%	10.7%	0.0%	2.2%	6.9%	18.2%
TERMINAL (c)	0/24 (0)	0/21 (0)	0/13 (0)	1/16 (6)	0/26 (0)	0/23 (0)	1/26 (4)	3/25 (12)
FIRST INCIDENCE (WEEKS)	66	88	100	87		65	100	82
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.586N	P=0.257	P=0.458N	P=0.666	P=0.811	P=0.046	P=0.243	P=0.022
INCIDENTAL TUMOR TEST	P=0.528N	P=0.202	P=0.668	P=0.361	P=0.003	P=0.019	P=0.509	P=0.078
COCHRAN-ARMITAGE TREND	P=0.407N	P=0.372	P=0.312N	P=0.620N	P=0.016	P=0.060	P=0.191	P=0.012
FISHER EXACT TESTS			P=0.692	P=0.338			P=0.480	P=0.059
			P=0.309N	P=0.510N			P=0.247	P=0.028
			P=0.753N	P=0.492			P=0.500	P=0.102
KIDNEY NOS ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	0/50 (0)	3/50 (6)	1/49 (2)	0/50 (0)	1/49 (2)	4/48 (8)	0/50 (0)
ADJUSTED (b)	0.0%	0.0%	16.5%	6.2%	0.0%	4.3%	13.6%	0.0%
TERMINAL (c)	0/24 (0)	0/21 (0)	1/13 (8)	1/16 (6)	0/26 (0)	1/23 (4)	2/26 (8)	0/25 (0)
FIRST INCIDENCE (WEEKS)			89	104		104	92	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.251	P=0.268	P=0.054	P=0.419	P=0.575	P=0.390N	P=0.060	(a)
INCIDENTAL TUMOR TEST	P=0.239	P=0.259	P=0.058	P=0.446	P=0.422	P=0.570N	P=0.210	P=0.483N
COCHRAN-ARMITAGE TREND	P=0.372	P=0.372	P=0.096	P=0.419	P=0.621	P=0.384N	P=0.034	(a)
FISHER EXACT TESTS			P=0.104	P=0.446			P=0.123	P=0.483N
			P=0.121	P=0.495			P=0.054	(a)
			P=0.121	P=0.495			P=0.174	P=0.495N

SL 035642

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

PAGE:

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VERSION: 11/13/84

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
KIDNEY NOS								
TUBULAR-CELL ADENOMA								
TUBULAR-CELL ADENOCARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	0/50 (0)	2/50 (4)	1/49 (2)	0/50 (0)	1/49 (2)	4/48 (8)	0/50 (0)
ADJUSTED (b)	0.0%	0.0%	12.6%	6.2%	0.0%	4.3%	13.6%	0.0%
TERMINAL (c)	0/24 (0)	0/21 (0)	1/13 (8)	1/16 (6)	0/26 (0)	1/23 (4)	2/26 (8)	0/25 (0)
FIRST INCIDENCE (WEEKS)			92	104		104	92	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.252	P=0.274	P=0.129	P=0.419	P=0.575	P=0.390N	P=0.060	(e)
INCIDENTAL TUMOR TEST	P=0.248	P=0.271	P=0.186	P=0.419	P=0.422	P=0.570N	P=0.034	(e)
COCHRAN-ARMITAGE TREND	P=0.355	P=0.355	P=0.201	P=0.446	P=0.621	P=0.384N	P=0.123	P=0.483N
FISHER EXACT TESTS			P=0.247	P=0.495			P=0.054	(e)
			P=0.247	P=0.495			P=0.174	P=0.495N
PITUITARY								
ADENOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	15/46 (33)	23/44 (52)	6/41 (15)	4/41 (10)	42/49 (86)	32/49 (65)	26/47 (55)	18/43 (42)
ADJUSTED (b)	54.6%	70.3%	32.6%	26.7%	97.7%	83.9%	76.0%	66.6%
TERMINAL (c)	11/23 (48)	12/21 (57)	2/11 (18)	4/15 (27)	25/26 (96)	17/23 (74)	18/26 (69)	16/25 (64)
FIRST INCIDENCE (WEEKS)	92	50	78	104	65	80	78	87
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.044N	P<0.001N	P=0.336N	P=0.049N	P<0.001N	P=0.005N	P=0.007N	P<0.001N
INCIDENTAL TUMOR TEST	P=0.040N	P<0.001N	P=0.038N	P=0.002N	P<0.001N	P=0.144N	P=0.116N	P=0.007N
COCHRAN-ARMITAGE TREND	P=0.005N	P<0.001N	P=0.005N	P<0.001N	P<0.001N	P=0.016N	P=0.006N	P=0.002N
FISHER EXACT TESTS			P=0.043N	P=0.009N			P=0.441N	P=0.216N
			P<0.001N	P<0.001N			P=0.002N	P<0.001N
							P=0.215N	P=0.020N

SL 035643

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

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VERSION: 11/13/84

RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PITUITARY CHROMOPHOBE ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/46 (2)	0/44 (0)	1/41 (2)	0/41 (0)	0/49 (0)	3/49 (6)	0/47 (0)	0/43 (0)
ADJUSTED (b)	2.1%	0.0%	3.4%	0.0%	0.0%	6.4%	0.0%	0.0%
TERMINAL (c)	0/23 (0)	0/21 (0)	0/11 (0)	0/15 (0)	0/26 (0)	0/23 (0)	0/26 (0)	0/25 (0)
FIRST INCIDENCE (WEEKS)	62		71			48		
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.432N		P=0.687	P=0.590N	(a)		(a)	(a)
INCIDENTAL TUMOR TEST	P=0.299N	P=0.658	P=0.426	(a)	(a)	P=0.062N	P=0.150N	P=0.197N
COCHRAN-ARMITAGE TREND		P=0.697N	P=0.738N	P=0.473N		P=0.015N	P=0.058N	P=0.053N
FISHER EXACT TESTS	P=0.358N	P=0.720	P=0.557	(a)	(a)	P=0.044N	(a)	(a)
			P=0.723	P=0.529N			P=0.129N	P=0.147N
			P=0.482	(a)				
PITUITARY CARCINOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/46 (0)	3/44 (7)	0/41 (0)	0/41 (0)	0/49 (0)	0/49 (0)	0/47 (0)	0/43 (0)
ADJUSTED (b)	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TERMINAL (c)	0/23 (0)	3/21 (14)	0/11 (0)	0/15 (0)	0/26 (0)	0/23 (0)	0/26 (0)	0/25 (0)
FIRST INCIDENCE (WEEKS)		104						
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)		(a)	(a)	(a)		(a)	(a)
INCIDENTAL TUMOR TEST	(a)	P=0.074N	P=0.252N	P=0.183N	(a)	(a)	(a)	(a)
COCHRAN-ARMITAGE TREND	(a)	P=0.074N	(a)	(a)	(a)	(a)	(a)	(a)
FISHER EXACT TESTS		P=0.042N	P=0.252N	P=0.183N	(a)	(a)	(a)	(a)
			(a)	(a)			(a)	(a)
			P=0.134N	P=0.134N			(a)	(a)

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 6
VERSION: 11/13/84T
RUN DATE: 02/20/85

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PITUITARY ADENOMA, NOS CARCINOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	15/46 (33)	26/44 (59)	6/41 (15)	4/41 (10)	42/49 (86)	32/49 (65)	26/47 (55)	18/43 (42)
ADJUSTED (b)	54.6%	80.2%	32.6%	26.7%	97.7%	83.9%	76.0%	66.6%
TERMINAL (c)	11/23 (48)	15/21 (71)	2/11 (18)	4/15 (27)	25/26 (96)	17/23 (74)	18/26 (69)	16/25 (64)
FIRST INCIDENCE (WEEKS)	92	50	78	104	65	80	78	87
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.044N	P<0.001N	P=0.336N	P=0.049N	P<0.001N	P=0.005N	P=0.007N	P<0.001N
INCIDENTAL TUMOR TEST	P=0.040N	P<0.001N	P=0.013N	P<0.001N	P<0.001N	P=0.144N	P=0.116N	P=0.007N
COCHRAN-ARMITAGE TREND	P=0.005N	P<0.001N	P=0.215N	P=0.056N	P<0.001N	P=0.016N	P=0.006N	P=0.002N
FISHER EXACT TESTS			P<0.001N	P<0.001N			P=0.441N	P=0.216N
			P=0.043N	P=0.009N			P=0.802N	P<0.001N
			P<0.001N	P<0.001N			P=0.215N	P=0.020N
ADRENAL CORTICAL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	6/49 (12)	5/50 (10)	3/49 (6)	5/47 (11)	4/50 (8)	6/48 (13)	6/48 (13)	5/50 (10)
ADJUSTED (b)	23.5%	20.0%	20.4%	29.4%	14.0%	22.4%	23.1%	20.0%
TERMINAL (c)	5/24 (21)	3/21 (14)	2/13 (15)	4/16 (25)	3/26 (12)	4/23 (17)	6/26 (23)	5/25 (20)
FIRST INCIDENCE (WEEKS)	93	83	99	99	94	96	104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.408	P=0.356	P=0.589N	P=0.464	P=0.393	P=0.401N	P=0.361	P=0.455
INCIDENTAL TUMOR TEST	P=0.382		P=0.627N	P=0.414	P=0.335		P=0.550N	P=0.480N
COCHRAN-ARMITAGE TREND	P=0.458N	P=0.271	P=0.572N	P=0.436	P=0.434	P=0.520N	P=0.338	P=0.356
FISHER EXACT TESTS		P=0.533	P=0.633N	P=0.333		P=0.409N	P=0.604N	P=0.599
			P=0.243N	P=0.530N			P=0.344	P=0.500
			P=0.369N	P=0.589			P=0.621N	P=0.471N

SL 035645

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS:

PAGE: 7
 VERSION: 11/13/84T
 RUN DATE: 02/20/85

	RI-01UM	RI-01VM	RI-01LM	RI-01HM	RI-01UF	RI-01VF	RI-01LF	RI-01HF
	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ADRENAL PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	15/49 (31)	10/50 (20)	5/49 (10)	2/47 (4)	6/50 (12)	9/48 (19)	2/48 (4)	0/50 (0)
ADJUSTED (b)	59.7%	41.0%	33.9%	12.5%	20.5%	33.2%	7.7%	0.0%
TERMINAL (c)	14/24 (58)	7/21 (33)	4/13 (31)	2/16 (13)	4/26 (15)	6/23 (26)	2/26 (8)	0/25 (0)
FIRST INCIDENCE (WEEKS)	93	97	89	104	94	92	104	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.003N		P=0.162N	P=0.004N	P=0.009N		P=0.137N	P=0.025N
INCIDENTAL TUMOR TEST	P=0.002N	P=0.039N	P=0.455N	P=0.049N	P=0.018N	P<0.001N	P=0.019N	P=0.003N
COCHRAN-ARMITAGE TREND		P=0.053N	P=0.140N	P=0.004N		P=0.001N	P=0.170N	P=0.059N
FISHER EXACT TESTS	P<0.001N	P=0.012N	P=0.460N	P=0.073N	P=0.008N	P<0.001N	P=0.034N	P=0.009N
			P=0.011N	P=0.001N			P=0.148N	P=0.014N
			P=0.140N	P=0.019N			P=0.026N	P=0.001N
ALL ADRENAL SITES PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	16/49 (33)	10/50 (20)	5/49 (10)	2/47 (4)	6/50 (12)	9/48 (19)	2/48 (4)	0/50 (0)
ADJUSTED (b)	63.7%	41.0%	33.9%	12.5%	20.5%	33.2%	7.7%	0.0%
TERMINAL (c)	15/24 (63)	7/21 (33)	4/13 (31)	2/16 (13)	4/26 (15)	6/23 (26)	2/26 (8)	0/25 (0)
FIRST INCIDENCE (WEEKS)	93	97	89	104	94	92	104	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.001N		P=0.115N	P=0.002N	P=0.009N		P=0.137N	P=0.025N
INCIDENTAL TUMOR TEST	P=0.001N	P=0.039N	P=0.455N	P=0.049N	P=0.018N	P<0.001N	P=0.019N	P=0.003N
COCHRAN-ARMITAGE TREND		P=0.053N	P=0.098N	P=0.002N		P=0.001N	P=0.170N	P=0.059N
FISHER EXACT TESTS	P<0.001N	P=0.012N	P=0.460N	P=0.073N	P=0.008N	P<0.001N	P=0.034N	P=0.009N
			P=0.006N	P<0.001N			P=0.148N	P=0.014N
			P=0.140N	P=0.019N			P=0.026N	P=0.001N

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

PAGE: 8

VERSION: 11/13/84

RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL ADRENAL SITES								
PHEOCHROMOCYTOMA								
PHEOCHROMOCYTOMA, MALIGNANT								
<u>TUMOR RATES</u>								
OVERALL (a)	16/49 (33)	10/50 (20)	6/49 (12)	3/47 (6)	6/50 (12)	9/48 (19)	2/48 (4)	0/50 (0)
ADJUSTED (b)	63.7%	41.0%	41.3%	18.7%	20.5%	33.2%	7.7%	0.0%
TERMINAL (c)	15/24 (63)	7/21 (33)	5/13 (38)	3/16 (19)	4/26 (15)	6/23 (26)	2/26 (8)	0/25 (0)
FIRST INCIDENCE (WEEKS)	93	97	89	104	94	92	104	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.004N		P=0.211N	P=0.006N	P=0.009N		P=0.137N	P=0.025N
INCIDENTAL TUMOR TEST	P=0.004N	P=0.090N	P=0.602N	P=0.104N	P=0.018N	P<0.001N	P=0.019N	P=0.003N
COCHRAN-ARMITAGE TREND		P=0.119N	P=0.184N	P=0.007N		P=0.001N	P=0.170N	P=0.059N
FISHER EXACT TESTS	P<0.001N	P=0.033N	P=0.610N	P=0.150N	P=0.008N	P<0.001N	P=0.034N	P=0.009N
			P=0.014N	P=0.002N			P=0.148N	P=0.014N
			P=0.220N	P=0.046N			P=0.026N	P=0.001N
THYROID								
C-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	3/49 (6)	7/46 (15)	0/44 (0)	0/45 (0)	0/50 (0)	0/49 (0)	3/49 (6)	1/50 (2)
ADJUSTED (b)	13.0%	27.1%	0.0%	0.0%	0.0%	0.0%	12.0%	4.0%
TERMINAL (c)	3/23 (13)	4/21 (19)	0/13 (0)	0/16 (0)	0/26 (0)	0/23 (0)	3/25 (12)	1/25 (4)
FIRST INCIDENCE (WEEKS)	104	78					104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.074N		P=0.235N	P=0.189N	P=0.365		P=0.112	P=0.492
INCIDENTAL TUMOR TEST	P=0.074N	P=0.005N	P=0.041N	P=0.030N	P=0.365	P=0.403	P=0.134	P=0.517
COCHRAN-ARMITAGE TREND		P=0.005N	P=0.235N	P=0.189N		P=0.403	P=0.112	P=0.492
FISHER EXACT TESTS	P=0.046N	P=0.001N	P=0.035N	P=0.030N	P=0.379	P=0.385	P=0.134	P=0.517
			P=0.142N	P=0.138N			P=0.117	P=0.500
			P=0.007N	P=0.007N			P=0.121	P=0.505

SL 035647

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RI-01UM RI-01VM RI-01LM RI-01HM RI-01UF RI-01VF RI-01LF RI-01HF

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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
THYROID								
C-CELL ADENOMA								
C-CELL CARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	3/49 (6)	8/46 (17)	0/44 (0)	0/45 (0)	0/50 (0)	0/49 (0)	4/49 (8)	1/50 (2)
ADJUSTED (b)	13.0%	31.4%	0.0%	0.0%	0.0%	0.0%	16.0%	4.0%
TERMINAL (c)	3/23 (13)	5/21 (24)	0/13 (0)	0/16 (0)	0/26 (0)	0/23 (0)	4/25 (16)	1/25 (4)
FIRST INCIDENCE (WEEKS)	104	78					104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.074N		P=0.235N	P=0.189N	P=0.375		P=0.056	P=0.492
INCIDENTAL TUMOR TEST	P=0.074N	P=0.003N	P=0.027N	P=0.018N		P=0.418	P=0.071	P=0.517
COCHRAN-ARMITAGE TREND			P=0.235N	P=0.189N	P=0.375		P=0.056	P=0.492
FISHER EXACT TESTS	P=0.044N	P<0.001N	P=0.023N	P=0.018N	P=0.391	P=0.418	P=0.071	P=0.517
			P=0.142N	P=0.138N		P=0.398	P=0.056	P=0.500
			P=0.004N	P=0.003N			P=0.059	P=0.505
PANCREATIC ISLETS								
ISLET-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	5/49 (10)	5/50 (10)	0/49 (0)	1/48 (2)	1/50 (2)	0/49 (0)	1/48 (2)	1/48 (2)
ADJUSTED (b)	19.8%	22.0%	0.0%	6.2%	3.4%	0.0%	3.8%	4.0%
TERMINAL (c)	4/24 (17)	4/21 (19)	0/13 (0)	1/16 (6)	0/26 (0)	0/23 (0)	1/26 (4)	1/25 (4)
FIRST INCIDENCE (WEEKS)	101	99		104	103		104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.103N		P=0.111N	P=0.223N	P=0.622		P=0.752	P=0.744
INCIDENTAL TUMOR TEST	P=0.105N	P=0.079N	P=0.088N	P=0.181N		P=0.347	P=0.524	P=0.517
COCHRAN-ARMITAGE TREND			P=0.104N	P=0.232N	P=0.484		P=0.711	P=0.551
FISHER EXACT TESTS	P=0.038N	P=0.094N	P=0.098N	P=0.210N		P=0.347	P=0.524	P=0.517
		P=0.040N			P=0.628	P=0.327		
			P=0.028N	P=0.107N			P=0.742	P=0.742
			P=0.030N	P=0.112N			P=0.495	P=0.495

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 10
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RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PANCREATIC ISLETS								
ISLET-CELL ADENOMA								
ISLET-CELL CARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	5/49 (10)	5/50 (10)	0/49 (0)	1/48 (2)	1/50 (2)	0/49 (0)	2/48 (4)	1/48 (2)
ADJUSTED (b)	19.8%	22.0%	0.0%	6.2%	3.4%	0.0%	7.7%	4.0%
TERMINAL (c)	4/24 (17)	4/21 (19)	0/13 (0)	1/16 (6)	0/26 (0)	0/23 (0)	2/26 (8)	1/25 (4)
FIRST INCIDENCE (WEEKS)	101	99		104	103		104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.103N		P=0.111N	P=0.223N	P=0.604		P=0.492	P=0.744
INCIDENTAL TUMOR TEST	P=0.105N	P=0.079N	P=0.088N	P=0.181N	P=0.483	P=0.380	P=0.265	P=0.517
COCHRAN-ARMITAGE TREND		P=0.094N	P=0.104N	P=0.232N		P=0.380	P=0.448	P=0.551
FISHER EXACT TESTS	P=0.038N	P=0.048N	P=0.098N	P=0.210N	P=0.609	P=0.355	P=0.265	P=0.517
			P=0.028N	P=0.107N			P=0.484	P=0.742
			P=0.030N	P=0.112N			P=0.242	P=0.495
MAMMARY GLAND								
ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	1/50 (2)	1/50 (2)	1/49 (2)	17/50 (34)	17/50 (34)	12/50 (24)	5/50 (10)
ADJUSTED (b)	4.2%	4.2%	5.3%	6.2%	44.9%	45.7%	38.1%	18.2%
TERMINAL (c)	1/24 (4)	0/21 (0)	0/13 (0)	1/16 (6)	6/26 (23)	5/23 (22)	7/26 (27)	4/25 (16)
FIRST INCIDENCE (WEEKS)	104	103	92	104	80	48	86	56
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.507		P=0.633	P=0.670	P=0.013N		P=0.252N	P=0.019N
INCIDENTAL TUMOR TEST	P=0.511	P=0.520	P=0.633	P=0.683	P=0.113N	P=0.008N	P=0.188N	P=0.013N
COCHRAN-ARMITAGE TREND		P=0.462	P=0.711	P=0.670		P=0.061N	P=0.511N	P=0.162N
FISHER EXACT TESTS	P=0.634	P=0.634	P=0.692	P=0.609	P=0.003N	P=0.003N	P=0.440N	P=0.058N
			P=0.753N	P=0.748			P=0.189N	P=0.004N
			P=0.753N	P=0.748			P=0.189N	P=0.004N

SL 035649

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

PAGE: 11

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
MAMMARY GLAND ADENOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	0/50 (0)	0/50 (0)	1/49 (2)	3/50 (6)	4/50 (8)	4/50 (8)	0/50 (0)
ADJUSTED (b)	0.0%	0.0%	0.0%	6.2%	8.2%	12.5%	14.4%	0.0%
TERMINAL (c)	0/24 (0)	0/21 (0)	0/13 (0)	1/16 (6)	0/26 (0)	1/23 (4)	3/26 (12)	0/25 (0)
FIRST INCIDENCE (WEEKS)				104	92	72	100	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.223		(a)	P=0.419	P=0.160N		P=0.483	P=0.185N
INCIDENTAL TUMOR TEST	P=0.223	P=0.241	(a)	P=0.446		P=0.069N	P=0.612N	P=0.090N
COCHRAN-ARMITAGE TREND		P=0.241	(a)	P=0.419	P=0.369N		P=0.345	P=0.500N
FISHER EXACT TESTS	P=0.266	P=0.266	(a)	P=0.446		P=0.135N	P=0.562	P=0.132N
			(a)	P=0.495	P=0.118N	P=0.060N	P=0.500	P=0.122N
			(a)	P=0.495			P=0.643N	P=0.059N
MAMMARY GLAND FIBROADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	1/50 (2)	0/50 (0)	0/49 (0)	13/50 (26)	10/50 (20)	8/50 (16)	4/50 (8)
ADJUSTED (b)	4.2%	4.2%	0.0%	0.0%	38.2%	33.1%	25.9%	14.3%
TERMINAL (c)	1/24 (4)	0/21 (0)	0/13 (0)	0/16 (0)	6/26 (23)	4/23 (17)	4/26 (15)	3/25 (12)
FIRST INCIDENCE (WEEKS)	104	103			80	86	86	56
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.342N		P=0.622N	P=0.581N	P=0.028N		P=0.207N	P=0.039N
INCIDENTAL TUMOR TEST	P=0.342N	P=0.342N	P=0.622N	P=0.581N		P=0.072N	P=0.353N	P=0.090N
COCHRAN-ARMITAGE TREND		P=0.436N	P=0.622N	P=0.581N	P=0.145N		P=0.375N	P=0.194N
FISHER EXACT TESTS	P=0.272N	P=0.272N	P=0.662N	P=0.718N		P=0.356N	P=0.563	P=0.385N
			P=0.500N	P=0.505N	P=0.011N	P=0.060N	P=0.163N	P=0.016N
			P=0.500N	P=0.505N			P=0.398N	P=0.074N

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RAIS
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS:

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 VERSION: 11/13/84
 RUN DATE: 02/20/85

	RI-01UM	RI-01VM	RI-01LM	RI-01HM	RI-01UF	RI-01VF	RI-01LF	RI-01HF
	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

TESTIS NOS
 INTERSTITIAL-CELL TUMOR

<u>TUMOR RATES</u>				
OVERALL (a)	36/50 (72)	34/50 (68)	30/50 (60)	26/49 (53)
ADJUSTED (b)	97.2%	97.1%	96.7%	100.0%
TERMINAL (c)	23/24 (96)	20/21 (95)	12/13 (92)	16/16 (100)
FIRST INCIDENCE (WEEKS)	66	73	65	66
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE	P=0.242		P=0.041	P=0.339
INCIDENTAL TUMOR TEST	P=0.249	P=0.279	P=0.049	P=0.385
COCHRAN-ARMITAGE TREND		P=0.129	P=0.133	P=0.288
FISHER EXACT TESTS	P=0.033N	P=0.078N	P=0.055	P=0.179
			P=0.146N	P=0.041N
			P=0.267N	P=0.094N

TESTICULAR SITES
 INTERSTITIAL-CELL TUMOR

<u>TUMOR RATES</u>				
OVERALL (a)	36/50 (72)	34/50 (68)	30/50 (60)	26/49 (53)
ADJUSTED (b)	97.2%	97.1%	96.7%	100.0%
TERMINAL (c)	23/24 (96)	20/21 (95)	12/13 (92)	16/16 (100)
FIRST INCIDENCE (WEEKS)	66	73	65	66
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE	P=0.242		P=0.041	P=0.339
INCIDENTAL TUMOR TEST	P=0.249	P=0.279	P=0.049	P=0.385
COCHRAN-ARMITAGE TREND		P=0.129	P=0.133	P=0.288
FISHER EXACT TESTS	P=0.033N	P=0.078N	P=0.055	P=0.179
			P=0.146N	P=0.041N
			P=0.267N	P=0.094N

SL 035651

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

TESTICULAR SITES

INTERSTITIAL-CELL TUMOR

INTERSTITIAL-CELL TUMOR, MALIGNANT

TUMOR RATES

OVERALL (a)

ADJUSTED (b)

TERMINAL (c)

FIRST INCIDENCE (WEEKS)

36/50 (72)	34/50 (68)	30/50 (60)	26/49 (53)
97.2%	97.1%	96.7%	100.0%
23/24 (96)	20/21 (95)	12/13 (92)	16/16 (100)
66	73	65	66

STATISTICAL TESTS (d)

LIFE TABLE

P=0.242 P=0.279 P=0.041 P=0.339

INCIDENTAL TUMOR TEST

P=0.249 P=0.129 P=0.049 P=0.385

COCHRAN-ARMITAGE TREND

P=0.033N P=0.078N P=0.055 P=0.288

FISHER EXACT TESTS

P=0.146N P=0.041N

P=0.267N P=0.094N

UTERUS NOS

ENDOMETRIAL STROMAL POLYP

TUMOR RATES

OVERALL (a)

ADJUSTED (b)

TERMINAL (c)

FIRST INCIDENCE (WEEKS)

1/50 (2)	3/49 (6)	0/48 (0)	0/49 (0)
3.8%	13.0%	0.0%	0.0%
1/26 (4)	3/23 (13)	0/26 (0)	0/25 (0)
104	104		

STATISTICAL TESTS (d)

LIFE TABLE

P=0.275N P=0.030N P=0.500N P=0.508N

INCIDENTAL TUMOR TEST

P=0.275N P=0.030N P=0.098N P=0.105N

COCHRAN-ARMITAGE TREND

P=0.273N P=0.038N P=0.500N P=0.508N

FISHER EXACT TESTS

P=0.510N P=0.505N

P=0.125N P=0.121N

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RI-01UM

RI-01VM

RI-01LM

RI-01HM

RI-01UF

RI-01VF

RI-01LF

RI-01HF

PAGE:

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VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
UTERUS NOS								
ENDOMETRIAL STROMAL POLYP								
ENDOMETRIAL STROMAL SARCOMA								
<u>TUMOR RATES</u>								
OVERALL (a)					1/50 (2)	3/49 (6)	0/48 (0)	0/49 (0)
ADJUSTED (b)					3.8%	13.0%	0.0%	0.0%
TERMINAL (c)					1/26 (4)	3/23 (13)	0/26 (0)	0/25 (0)
FIRST INCIDENCE (WEEKS)					104	104		
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE					P=0.275N		P=0.500N	P=0.508N
INCIDENTAL TUMOR TEST					P=0.275N	P=0.030N	P=0.098N	P=0.105N
COCHRAN-ARMITAGE TREND						P=0.030N	P=0.500N	P=0.508N
FISHER EXACT TESTS					P=0.273N	P=0.038N	P=0.098N	P=0.105N
							P=0.510N	P=0.505N
							P=0.125N	P=0.121N

- a) Number of tumor-bearing animals/number of animals examined at the site (percent).
b) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.
c) Observed tumor incidence at terminal kill.
d) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact tests compare directly the overall incidence rates. A negative trend is indicated by N.
e) Differences not significant; no tumors observed in dosed group or control group.

SL 035653

FINAL #2

ACI Rats

RECEIVED 11/1/85

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBD5 CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 1
VERSION: 11/13/84T
RUN DATE: 02/20/85

	RC-01UM	RC-01VM	RC-01LM	RC-01HM	RC-01UF	RC-01VF	RC-01LF	RC-01HF
SURVIVAL AT MINIMUM	39/50 78%	38/50 76%	19/50 38%	11/50 22%	37/50 74%	35/50 70%	20/50 40%	19/50 38%
TERMINAL SACRIFICE(WEEK)	104	104	104	104	104	104	104	104

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

ALL TOPOGRAPHIES ALL TUMORS

TUMOR RATES								
OVERALL (a)	45/49 (92)	44/50 (88)	27/49 (55)	17/50 (34)	34/49 (69)	32/50 (64)	21/50 (42)	18/46 (39)
ADJUSTED (b)	97.8%	100.0%	100.0%	100.0%	75.5%	74.0%	76.9%	77.5%
TERMINAL (c)	38/39 (97)	38/38 (100)	19/19 (100)	11/11 (100)	26/37 (70)	24/35 (69)	14/20 (70)	14/19 (74)
FIRST INCIDENCE (WEEKS)	70	50	53	75	54	51	68	28
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.030	P=0.040	P=0.086	P=0.054	P=0.483	P=0.464	P=0.386	P=0.564
INCIDENTAL TUMOR TEST	P=0.576	P=0.285N	P=0.109	P=0.063	P=0.203N	P=0.268N	P=0.369	P=0.558
COCHRAN-ARMITAGE TREND	P<0.001N	P<0.001N	P=0.622	P=0.667	P=0.002N	P=0.009N	P=0.190N	P=0.279N
FISHER EXACT TESTS			P=0.469N	P=0.366N			P=0.193N	P=0.283N
			P<0.001N	P<0.001N			P=0.006N	P=0.003N
			P<0.001N	P<0.001N			P=0.023N	P=0.013N

HEMATOPOIETIC SYSTEM ALL TUMORS

TUMOR RATES								
OVERALL (a)	2/49 (4)	3/50 (6)	1/49 (2)	0/50 (0)	3/49 (6)	2/50 (4)	2/50 (4)	1/46 (2)
ADJUSTED (b)	4.6%	7.2%	5.0%	0.0%	7.8%	5.7%	10.0%	5.3%
TERMINAL (c)	0/39 (0)	1/38 (3)	0/19 (0)	0/11 (0)	2/37 (5)	2/35 (6)	2/20 (10)	1/19 (5)
FIRST INCIDENCE (WEEKS)	81	80	102		99	106	104	104
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.397N	P=0.246N	P=0.720N	P=0.527N	P=0.486N	P=0.592	P=0.594	P=0.563N
INCIDENTAL TUMOR TEST	P=0.283N	P=0.105N	P=0.528N	P=0.384N	P=0.512N	P=0.592	P=0.481	P=0.708N
COCHRAN-ARMITAGE TREND	P=0.139N	P=0.061N	P=0.614N	P=0.428N	P=0.239N	P=0.419N	P=0.528	P=0.584N
FISHER EXACT TESTS			P=0.257N	P=0.423N			P=0.481	P=0.708N
			P=0.500N	P=0.243N			P=0.491N	P=0.333N
			P=0.316N	P=0.122N			P=0.691N	P=0.532N

SL 035654

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 680244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

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VERSION: 11/13/84
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
HEMATOPOIETIC SYSTEM ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	2/49 (4)	3/50 (6)	0/49 (0)	0/50 (0)	2/49 (4)	0/50 (0)	0/50 (0)	1/46 (2)
ADJUSTED (b)	4.6%	7.2%	0.0%	0.0%	5.1%	0.0%	0.0%	5.3%
TERMINAL (c)	0/39 (0)	1/38 (3)	0/19 (0)	0/11 (0)	1/37 (3)	0/35 (0)	0/20 (0)	1/19 (5)
FIRST INCIDENCE (WEEKS)	81	80			99			104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.246N		P=0.389N	P=0.527N	P=0.562N		P=0.386N	P=0.726N
INCIDENTAL TUMOR TEST	P=0.152N	P=0.139N	P=0.239N	P=0.384N	P=0.596N	P=0.193	(a) P=0.488N	P=0.378
COCHRAN-ARMITAGE TREND	P=0.094N	P=0.093N	P=0.217N	P=0.428N	P=0.376N	P=0.193	(a) P=0.257	P=0.719
FISHER EXACT TESTS		P=0.038N	P=0.121N	P=0.423N		P=0.257	P=0.243N	P=0.378
			P=0.247N	P=0.243N			(a) P=0.524N	P=0.479
			P=0.125N	P=0.122N				
HEMATOPOIETIC SYSTEM ALL LYMPHOMAS ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	2/49 (4)	3/50 (6)	1/49 (2)	0/50 (0)	3/49 (6)	1/50 (2)	2/50 (4)	1/46 (2)
ADJUSTED (b)	4.6%	7.2%	5.0%	0.0%	7.8%	2.9%	10.0%	5.3%
TERMINAL (c)	0/39 (0)	1/38 (3)	0/19 (0)	0/11 (0)	2/37 (5)	1/35 (3)	2/20 (10)	1/19 (5)
FIRST INCIDENCE (WEEKS)	81	80	102		99	106	104	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.397N		P=0.720N	P=0.527N	P=0.486N		P=0.594	P=0.563N
INCIDENTAL TUMOR TEST	P=0.283N	P=0.246N	P=0.528N	P=0.384N	P=0.512N	P=0.411	P=0.308	P=0.620
COCHRAN-ARMITAGE TREND	P=0.139N	P=0.105N	P=0.614N	P=0.428N	P=0.239N	P=0.411	P=0.528	P=0.584N
FISHER EXACT TESTS		P=0.061N	P=0.257N	P=0.423N		P=0.596	P=0.308	P=0.620
			P=0.500N	P=0.243N			P=0.491N	P=0.333N
			P=0.316N	P=0.122N			P=0.590	P=0.731

SL 035655

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS
 CBDS CONTRACT: 600244 PAPANICOLAOU
 CHEMICAL: C04546 TRICHLOROETHYLENE
 GROUP IDS:

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 VERSION: 11/13/84T
 RUN DATE: 02/20/85

CHEMICAL: C04546 TRICHLOROETHYLENE		RC-01UM		RC-01VM		RC-01LM		RC-01HM		RC-01UF		RC-01VF		RC-01LF		RC-01HF	
		MALE								FEMALE							
DOSE IN GM/KG		0.0		0.0		0.5		1.0		0.0		0.0		0.5		1.0	
KIDNEY NOS ALL TUMORS																	
TUMOR RATES																	
OVERALL (a)		3/49 (6)		0/50 (0)		1/49 (2)		1/49 (2)		1/49 (2)		2/48 (4)		6/47 (13)		2/43 (5)	
ADJUSTED (b)		7.2%		0.0%		4.2%		9.1%		2.4%		5.1%		24.0%		9.4%	
TERMINAL (c)		2/39 (5)		0/38 (0)		0/19 (0)		1/11 (9)		0/37 (0)		1/34 (3)		3/20 (15)		1/19 (5)	
FIRST INCIDENCE (WEEKS)		87				91		104		98		83		68		84	
STATISTICAL TESTS (d)																	
LIFE TABLE		P=0.611N		P=0.122		P=0.557N		P=0.686		P=0.148		P=0.266		P=0.010		P=0.280	
INCIDENTAL TUMOR TEST		P=0.491N		P=0.112		P=0.403		P=0.255		P=0.368		P=0.528		P=0.035		P=0.466	
COCHRAN-ARMITAGE TREND		P=0.202N		P=0.327		P=0.253N		P=0.720		P=0.353		P=0.522		P=0.053		P=0.576	
FISHER EXACT TESTS		P=0.202N		P=0.327		P=0.545		P=0.255		P=0.353		P=0.522		P=0.219		P=0.678	
						P=0.309N		P=0.309N						P=0.049		P=0.451	
						P=0.495		P=0.495						P=0.127		P=0.649	
KIDNEY NOS TRANSITIONAL-CELL PAPILLOMA TRANSITIONAL-CELL CARCINOMA																	
TUMOR RATES																	
OVERALL (a)		3/49 (6)		0/50 (0)		0/49 (0)		1/49 (2)		0/49 (0)		1/48 (2)		2/47 (4)		1/43 (2)	
ADJUSTED (b)		7.2%		0.0%		0.0%		9.1%		0.0%		2.9%		8.5%		5.3%	
TERMINAL (c)		2/39 (5)		0/38 (0)		0/19 (0)		1/11 (9)		0/37 (0)		1/34 (3)		1/20 (5)		1/19 (5)	
FIRST INCIDENCE (WEEKS)		87						104				106		87		104	
STATISTICAL TESTS (d)																	
LIFE TABLE		P=0.523N		P=0.116		P=0.265N		P=0.686		P=0.199		P=0.416		P=0.133		P=0.367	
INCIDENTAL TUMOR TEST		P=0.456N		P=0.116		(a)		P=0.255		P=0.384		P=0.493		P=0.327		P=0.627	
COCHRAN-ARMITAGE TREND		P=0.176N		P=0.267		P=0.138N		P=0.720		P=0.326		P=0.588		P=0.495		P=0.367	
FISHER EXACT TESTS		P=0.176N		P=0.267		(a)		P=0.255		P=0.326		P=0.588		P=0.495		P=0.627	
						P=0.121N		P=0.309N						P=0.237		P=0.467	
						(a)		P=0.495						P=0.492		P=0.724	

SL 035656

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

RC-01UM

RC-01VM

RC-01LM

RC-01HM

RC-01UF

RC-01VF

RC-01LF

RC-01HF

PAGE:

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PITUITARY ADENOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	8/48 (17)	6/39 (15)	4/33 (12)	3/29 (10)	24/47 (51)	18/42 (43)	7/36 (19)	7/32 (22)
ADJUSTED (b)	19.9%	16.9%	19.5%	28.7%	59.8%	51.1%	33.7%	36.8%
TERMINAL (c)	6/38 (16)	5/34 (15)	3/19 (16)	2/9 (22)	21/37 (57)	16/33 (48)	6/19 (32)	7/19 (37)
FIRST INCIDENCE (WEEKS)	101	100	91	102	74	96	70	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.368		P=0.626N	P=0.412	P=0.030N		P=0.059N	P=0.062N
INCIDENTAL TUMOR TEST	P=0.427	P=0.257	P=0.522	P=0.315	P=0.024N	P=0.135N	P=0.196N	P=0.197N
COCHRAN-ARMITAGE TREND		P=0.478	P=0.569N	P=0.463		P=0.122N	P=0.042N	P=0.054N
FISHER EXACT TESTS	P=0.259N	P=0.329N	P=0.547N	P=0.607	P=0.003N	P=0.025N	P=0.165N	P=0.211N
			P=0.408N	P=0.340N			P=0.003N	P=0.008N
			P=0.480N	P=0.409N			P=0.024N	P=0.049N
PITUITARY ADENOMA, NOS CARCINOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	8/48 (17)	6/39 (15)	4/33 (12)	3/29 (10)	24/47 (51)	18/42 (43)	7/36 (19)	8/32 (25)
ADJUSTED (b)	19.9%	16.9%	19.5%	28.7%	59.8%	51.1%	33.7%	40.0%
TERMINAL (c)	6/38 (16)	5/34 (15)	3/19 (16)	2/9 (22)	21/37 (57)	16/33 (48)	6/19 (32)	7/19 (37)
FIRST INCIDENCE (WEEKS)	101	100	91	102	74	96	70	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.368		P=0.626N	P=0.412	P=0.061N		P=0.059N	P=0.121N
INCIDENTAL TUMOR TEST	P=0.427	P=0.257	P=0.522	P=0.315	P=0.054N	P=0.223N	P=0.196N	P=0.312N
COCHRAN-ARMITAGE TREND		P=0.478	P=0.569N	P=0.463		P=0.217N	P=0.042N	P=0.109N
FISHER EXACT TESTS	P=0.259N	P=0.329N	P=0.547N	P=0.607	P=0.006N	P=0.049N	P=0.165N	P=0.341N
			P=0.408N	P=0.340N			P=0.003N	P=0.018N
			P=0.480N	P=0.409N			P=0.024N	P=0.088N

SL 035657

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

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VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ADRENAL CORTICAL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	8/48 (17)	6/48 (13)	1/44 (2)	0/45 (0)	1/49 (2)	2/48 (4)	1/44 (2)	3/40 (8)
ADJUSTED (b)	19.9%	15.8%	5.6%	0.0%	2.7%	5.7%	5.0%	15.8%
TERMINAL (c)	7/39 (18)	6/38 (16)	1/18 (6)	0/11 (0)	1/37 (3)	2/35 (6)	1/20 (5)	3/19 (16)
FIRST INCIDENCE (WEEKS)	101	105	104		106	106	105	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.038N		P=0.152N	P=0.127N	P=0.067		P=0.619	P=0.107
INCIDENTAL TUMOR TEST	P=0.037N	P=0.080N	P=0.260N	P=0.191N	P=0.067	P=0.179	P=0.692N	P=0.235
COCHRAN-ARMITAGE TREND		P=0.080N	P=0.158N	P=0.119N			P=0.619	P=0.107
FISHER EXACT TESTS	P=0.001N	P=0.006N	P=0.260N	P=0.191N	P=0.152	P=0.329	P=0.692N	P=0.235
			P=0.021N	P=0.004N			P=0.725	P=0.236
			P=0.070N	P=0.016N			P=0.533N	P=0.413
ADRENAL PHEDCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	8/48 (17)	0/44 (0)	0/45 (0)	1/49 (2)	3/48 (6)	0/44 (0)	2/40 (5)
ADJUSTED (b)	10.3%	21.1%	0.0%	0.0%	2.7%	7.9%	0.0%	10.5%
TERMINAL (c)	4/39 (10)	8/38 (21)	0/18 (0)	0/11 (0)	1/37 (3)	2/35 (6)	0/20 (0)	2/19 (11)
FIRST INCIDENCE (WEEKS)	107	105			106	85		104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.104N		P=0.199N	P=0.318N	P=0.195		P=0.623N	P=0.275
INCIDENTAL TUMOR TEST	P=0.104N	P=0.017N	P=0.047N	P=0.117N	P=0.195	P=0.594	P=0.227N	P=0.599
COCHRAN-ARMITAGE TREND		P=0.017N	P=0.199N	P=0.318N			P=0.623N	P=0.275
FISHER EXACT TESTS	P=0.018N	P<0.001N	P=0.047N	P=0.117N	P=0.307	P=0.582N	P=0.139N	P=0.650
			P=0.070N	P=0.067N			P=0.527N	P=0.423
			P=0.004N	P=0.004N			P=0.138N	P=0.587N

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

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VERSION: 11/13/84T
RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL ADRENAL SITES PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	8/48 (17)	0/44 (0)	0/45 (0)	1/49 (2)	3/48 (6)	0/44 (0)	2/40 (5)
ADJUSTED (b)	10.3%	21.1%	0.0%	0.0%	2.7%	7.9%	0.0%	10.5%
TERMINAL (c)	4/39 (10)	8/38 (21)	0/18 (0)	0/11 (0)	1/37 (3)	2/35 (6)	0/20 (0)	2/19 (11)
FIRST INCIDENCE (WEEKS)	107	105			106	83		104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.104N	P=0.017N	P=0.199N	P=0.318N	P=0.195	P=0.594	P=0.623N	P=0.275
INCIDENTAL TUMOR TEST	P=0.104N	P=0.017N	P=0.047N	P=0.117N	P=0.195	P=0.582N	P=0.227N	P=0.599
COCHRAN-ARMITAGE TREND	P=0.018N	P<0.001N	P=0.199N	P=0.318N	P=0.307	P=0.456N	P=0.623N	P=0.275
FISHER EXACT TESTS			P=0.047N	P=0.117N			P=0.139N	P=0.650
			P=0.070N	P=0.067N			P=0.527N	P=0.423
			P=0.004N	P=0.004N			P=0.138N	P=0.587N

ALL ADRENAL SITES
PHEOCHROMOCYTOMA
PHEOCHROMOCYTOMA, MALIGNANT

<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	8/48 (17)	0/44 (0)	0/45 (0)	1/49 (2)	3/48 (6)	1/44 (2)	2/40 (5)
ADJUSTED (b)	10.3%	21.1%	0.0%	0.0%	2.7%	7.9%	3.6%	10.5%
TERMINAL (c)	4/39 (10)	8/38 (21)	0/18 (0)	0/11 (0)	1/37 (3)	2/35 (6)	0/20 (0)	2/19 (11)
FIRST INCIDENCE (WEEKS)	107	105			106	83	85	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.104N	P=0.017N	P=0.199N	P=0.318N	P=0.190	P=0.541	P=0.643	P=0.275
INCIDENTAL TUMOR TEST	P=0.104N	P=0.017N	P=0.047N	P=0.117N	P=0.278	P=0.578N	P=0.492N	P=0.599
COCHRAN-ARMITAGE TREND	P=0.018N	P<0.001N	P=0.199N	P=0.318N	P=0.316	P=0.472N	P=0.623N	P=0.275
FISHER EXACT TESTS			P=0.047N	P=0.117N			P=0.267N	P=0.650
			P=0.070N	P=0.067N			P=0.725	P=0.423
			P=0.004N	P=0.004N			P=0.342N	P=0.587N

SL 035659

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CIDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C84546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

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VERSION: 11/13/84T
RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
MAMMARY GLAND ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/49 (0)	0/50 (0)	0/49 (0)	0/50 (0)	3/49 (6)	3/50 (6)	1/50 (2)	1/46 (2)
ADJUSTED (b)	0.0%	0.0%	0.0%	0.0%	8.1%	7.5%	4.2%	5.3%
TERMINAL (c)	0/39 (0)	0/38 (0)	0/19 (0)	0/11 (0)	3/37 (8)	1/35 (3)	0/20 (0)	1/19 (5)
FIRST INCIDENCE (WEEKS)					106	96	89	104
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	(a)	(a)	(a)	P=0.429N	P=0.428N	P=0.535N	P=0.562N
INCIDENTAL TUMOR TEST	(a)	(a)	(a)	(a)	P=0.311N	P=0.466N	P=0.547N	P=0.555N
COCHRAN-ARMITAGE TREND	(a)	(a)	(a)	(a)	P=0.216N	P=0.222N	P=0.248N	P=0.562N
FISHER EXACT TESTS			(a)	(a)			P=0.545N	P=0.658N
			(a)	(a)			P=0.301N	P=0.333N
			(a)	(a)			P=0.309N	P=0.341N
PROSTATE NOS ADENOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/48 (0)	3/49 (6)	0/45 (0)	0/43 (0)				
ADJUSTED (b)	0.0%	7.9%	0.0%	0.0%				
TERMINAL (c)	0/39 (0)	3/38 (8)	0/19 (0)	0/11 (0)				
FIRST INCIDENCE (WEEKS)		105						
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	(a)	P=0.153N	(a)	(a)				
INCIDENTAL TUMOR TEST	(a)	P=0.153N	(a)	(a)				
COCHRAN-ARMITAGE TREND	(a)	P=0.046N	(a)	(a)				
FISHER EXACT TESTS			(a)	(a)				
			P=0.138N	P=0.147N				

09550 TS

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 8
VERSION: 11/13/84T
RUN DATE: 02/20/85

RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

TESTIS NOS
INTERSTITIAL-CELL TUMOR

TUMOR RATES				
OVERALL (a)	38/47 (81)	36/49 (73)	23/49 (47)	17/49 (35)
ADJUSTED (b)	90.4%	94.7%	95.8%	100.0%
TERMINAL (c)	34/38 (89)	36/38 (95)	18/19 (95)	11/11 (100)
FIRST INCIDENCE (WEEKS)	70	104	84	75

STATISTICAL TESTS (d)				
LIFE TABLE	P=0.003	P<0.001	P=0.119	P=0.006
INCIDENTAL TUMOR TEST	P=0.079	P=0.019	P=0.024	P<0.001
COCHRAN-ARMITAGE TREND	P<0.001N	P<0.001N	P=0.507	P=0.235
FISHER EXACT TESTS			P=0.223	P=0.074
			P<0.001N	P<0.001N
			P=0.007N	P<0.001N

TESTICULAR SITES
INTERSTITIAL-CELL TUMOR

TUMOR RATES				
OVERALL (a)	38/47 (81)	36/49 (73)	23/49 (47)	17/49 (35)
ADJUSTED (b)	90.4%	94.7%	95.8%	100.0%
TERMINAL (c)	34/38 (89)	36/38 (95)	18/19 (95)	11/11 (100)
FIRST INCIDENCE (WEEKS)	70	104	84	75

STATISTICAL TESTS (d)				
LIFE TABLE	P=0.003	P<0.001	P=0.119	P=0.006
INCIDENTAL TUMOR TEST	P=0.079	P=0.019	P=0.024	P<0.001
COCHRAN-ARMITAGE TREND	P<0.001N	P<0.001N	P=0.507	P=0.235
FISHER EXACT TESTS			P=0.223	P=0.074
			P<0.001N	P<0.001N
			P=0.007N	P<0.001N

SL 035661

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

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DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

TESTICULAR SITES
INTERSTITIAL-CELL TUMOR
INTERSTITIAL-CELL TUMOR, MALIGNANT

<u>TUMOR RATES</u>				
OVERALL (a)	38/47 (81)	36/49 (73)	23/49 (47)	17/49 (35)
ADJUSTED (b)	90.4%	94.7%	95.8%	100.0%
TERMINAL (c)	34/38 (89)	36/38 (95)	18/19 (95)	11/11 (100)
FIRST INCIDENCE (WEEKS)	70	104	84	75
<u>STATISTICAL TESTS (d)</u>				
LIFE TABLE	P=0.003		P=0.119	P=0.006
INCIDENTAL TUMOR TEST	P=0.079	P<0.001	P=0.024	P<0.001
COCHRAN-ARMITAGE TREND		P=0.019	P=0.507	P=0.235
FISHER EXACT TESTS		P<0.001N	P=0.223	P=0.074
			P<0.001N	P<0.001N
			P=0.007N	P<0.001N

UTERUS NOS
ENDOMETRIAL STROMAL POLYP

<u>TUMOR RATES</u>					
OVERALL (a)		1/48 (2)	4/49 (8)	3/48 (6)	2/40 (5)
ADJUSTED (b)		2.7%	10.7%	15.0%	10.5%
TERMINAL (c)		1/37 (3)	3/35 (9)	3/20 (15)	2/19 (11)
FIRST INCIDENCE (WEEKS)		106	96	104	104
<u>STATISTICAL TESTS (d)</u>					
LIFE TABLE		P=0.163		P=0.119	P=0.275
INCIDENTAL TUMOR TEST		P=0.163	P=0.580N	P=0.505	P=0.641N
COCHRAN-ARMITAGE TREND			P=0.546	P=0.119	P=0.275
FISHER EXACT TESTS		P=0.329	P=0.348N	P=0.434	P=0.668
				P=0.308	P=0.431
				P=0.512N	P=0.440N

SL 035662

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: RC-01UM RC-01VM RC-01LM RC-01HM RC-01UF RC-01VF RC-01LF RC-01HF

PAGE: 18
VERSION: 11/13/84T
RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
UTERUS NOS ENDOMETRIAL STROMAL POLYP ENDOMETRIAL STROMAL SARCOMA								
<u>TUMOR RATES</u>								
OVERALL (a)					1/48 (2)	4/49 (8)	3/48 (6)	3/40 (8)
ADJUSTED (b)					2.7%	10.7%	15.0%	13.8%
TERMINAL (c)					1/37 (3)	3/35 (9)	3/20 (15)	2/19 (11)
FIRST INCIDENCE (WEEKS)					106	96	104	71
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE					P=0.072		P=0.119	P=0.119
INCIDENTAL TUMOR TEST					P=0.086	P=0.398	P=0.505	P=0.491
COCHRAN-ARMITAGE TREND						P=0.426	P=0.119	P=0.168
FISHER EXACT TESTS					P=0.178	P=0.526N	P=0.434	P=0.594
							P=0.308	P=0.242
							P=0.512N	P=0.613N

- a) Number of tumor-bearing animals/number of animals examined at the site (percent).
b) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.
c) Observed tumor incidence at terminal kill.
d) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards these lesions as non-fatal. The Cochran-Armitage and Fisher's exact tests compare directly the overall incidence rates. A negative trend is indicated by N.
e) Differences not significant; no tumors observed in dosed group or control group.

SL 035663

FINAL #4

Osborne-Mendel Rats

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INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

SURVIVAL AT MINIMUM	21/50 42%	22/50 44%	17/50 34%	15/50 30%	19/50 38%	20/50 40%	11/50 22%	7/50 14%
TERMINAL SACRIFICE(WEEK)	104	104	104	104	104	104	104	104

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0

ALL TOPOGRAPHIES
ALL TUMORS

TUMOR RATES

OVERALL (a)	39/50 (78)	37/50 (74)	35/50 (70)	29/50 (58)	44/50 (88)	40/50 (80)	36/50 (72)	37/50 (74)
ADJUSTED (b)	94.9%	94.7%	97.0%	96.3%	100.0%	97.5%	100.0%	100.0%
TERMINAL (c)	19/21 (90)	20/22 (91)	16/17 (94)	14/15 (93)	19/19 (100)	19/20 (95)	11/11 (100)	7/7 (100)
FIRST INCIDENCE (WEEKS)	63	70	11	21	48	19	35	45

STATISTICAL TESTS (d)
LIFE TABLE

	P=0.352	P=0.249	P=0.323	P=0.394	P=0.081	P=0.015	P=0.319	P=0.096
INCIDENTAL TUMOR TEST	P=0.334N		P=0.224	P=0.294	P=0.070N		P=0.109	P=0.020
COCHRAN-ARMITAGE TREND	P=0.020N	P=0.399N	P=0.490N	P=0.434N	P=0.058N	P=0.432N	P=0.073N	P=0.087N
FISHER EXACT TESTS		P=0.055N	P=0.601N	P=0.529N		P=0.281N	P=0.440N	P=0.482N
			P=0.248N	P=0.027N			P=0.040N	P=0.063N
			P=0.412N	P=0.070N			P=0.242N	P=0.318N

SUBCUT TISSUE NOS
FIBROMA

TUMOR RATES

OVERALL (a)	3/50 (6)	4/50 (8)	3/50 (6)	0/50 (0)	0/50 (0)	0/50 (0)	2/50 (4)	1/50 (2)
ADJUSTED (b)	9.8%	13.6%	14.0%	0.0%	0.0%	0.0%	8.5%	2.9%
TERMINAL (c)	0/21 (0)	1/22 (.5)	2/17 (12)	0/15 (0)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	95	86	78				70	80

STATISTICAL TESTS (d)
LIFE TABLE

	P=0.200N	P=0.112N	P=0.552	P=0.218N	P=0.320	P=0.314	P=0.195	P=0.500
INCIDENTAL TUMOR TEST	P=0.181N		P=0.612N	P=0.129N	P=0.433		P=0.194	P=0.489
COCHRAN-ARMITAGE TREND	P=0.101N	P=0.095N	P=0.587	P=0.278N	P=0.360	P=0.491	P=0.278	P=0.581
FISHER EXACT TESTS		P=0.049N	P=0.547N	P=0.130N		P=0.360	P=0.300	P=0.682
			P=0.661N	P=0.122N			P=0.247	P=0.500
			P=0.500N	P=0.059N			P=0.247	P=0.500

SL 035664

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: CD4546 TRICHLOROETHYLENE
GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 2
VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
SUBCUT TISSUE NOS FIBROMA FIBROSARCOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	4/50 (8)	3/50 (6)	0/50 (0)	0/50 (0)	0/50 (0)	2/50 (4)	1/50 (2)
ADJUSTED (b)	9.8%	13.6%	14.0%	0.0%	0.0%	0.0%	8.5%	2.9%
TERMINAL (c)	0/21 (0)	1/22 (5)	2/17 (12)	0/15 (0)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	95	86	78				70	80
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.200N		P=0.552	P=0.218N	P=0.320		P=0.195	P=0.500
INCIDENTAL TUMOR TEST	P=0.181N	P=0.112N	P=0.612N	P=0.129N		P=0.314	P=0.194	P=0.489
COCHRAN-ARMITAGE TREND		P=0.095N	P=0.587	P=0.278N	P=0.433		P=0.278	P=0.581
FISHER EXACT TESTS	P=0.101N	P=0.049N	P=0.547N	P=0.130N	P=0.360	P=0.491	P=0.300	P=0.682
			P=0.661N	P=0.122N			P=0.247	P=0.500
			P=0.500N	P=0.059N			P=0.247	P=0.500
INTEGUMENTARY SYSTEM FIBROMA								
<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	4/50 (8)	4/50 (8)	2/50 (4)	0/50 (0)	0/50 (0)	2/50 (4)	1/50 (2)
ADJUSTED (b)	9.8%	13.6%	19.8%	11.6%	0.0%	0.0%	8.5%	2.9%
TERMINAL (c)	0/21 (0)	1/22 (5)	3/17 (18)	1/15 (7)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	95	86	78	97			70	80
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.548		P=0.381	P=0.664	P=0.320		P=0.195	P=0.500
INCIDENTAL TUMOR TEST	P=0.545	P=0.468N	P=0.519	P=0.528N		P=0.314	P=0.194	P=0.489
COCHRAN-ARMITAGE TREND		P=0.451N	P=0.408	P=0.573	P=0.433		P=0.278	P=0.581
FISHER EXACT TESTS	P=0.417N	P=0.274N	P=0.582	P=0.548N	P=0.360	P=0.491	P=0.300	P=0.682
			P=0.500	P=0.500N			P=0.247	P=0.500
			P=0.643N	P=0.339N			P=0.247	P=0.500

SL 035665

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 3
VERSION: 11/13/84T
RUN DATE: 02/20/85

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
INTEGUMENTARY SYSTEM								
FIBROMA								
FIBROSARCOMA								
TUMOR RATES								
OVERALL (a)	3/50 (6)	4/50 (8)	4/50 (8)	2/50 (4)	0/50 (0)	0/50 (0)	2/50 (4)	1/50 (2)
ADJUSTED (b)	9.8%	13.6%	19.8%	11.6%	0.0%	0.0%	8.5%	2.9%
TERMINAL (c)	0/21 (0)	1/22 (5)	3/17 (18)	1/15 (7)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	95	86	78	97			78	80
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.548		P=0.381	P=0.664	P=0.320		P=0.195	P=0.500
INCIDENTAL TUMOR TEST	P=0.545	P=0.468N	P=0.519	P=0.528N		P=0.314	P=0.194	P=0.689
COCHRAN-ARMITAGE TREND		P=0.451N	P=0.408	P=0.573	P=0.433	P=0.491	P=0.278	P=0.581
FISHER EXACT TESTS	P=0.417N	P=0.274N	P=0.582	P=0.548N	P=0.360	P=0.360	P=0.300	P=0.682
			P=0.500	P=0.500H			P=0.247	P=0.500
			P=0.643N	P=0.339H			P=0.247	P=0.500
HEMATOPOIETIC SYSTEM								
ALL TUMORS								
TUMOR RATES								
OVERALL (a)	1/50 (2)	2/50 (4)	0/50 (0)	3/50 (6)	3/50 (6)	2/50 (4)	4/50 (8)	2/50 (4)
ADJUSTED (b)	4.3%	6.3%	0.0%	9.5%	10.2%	5.4%	15.9%	9.3%
TERMINAL (c)	0/21 (0)	0/22 (0)	0/17 (0)	0/15 (0)	0/19 (0)	0/20 (0)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	103	70		34	85	19	41	79
STATISTICAL TESTS (d)								
LIFE TABLE	P=0.114		P=0.549N	P=0.197	P=0.544N		P=0.401	P=0.590N
INCIDENTAL TUMOR TEST	P=0.159	P=0.284	P=0.280N	P=0.358		P=0.471	P=0.268	P=0.622
COCHRAN-ARMITAGE TREND		P=0.439	P=0.573N	P=0.269	P=0.287H	P=0.536H	P=0.587	P=0.271H
FISHER EXACT TESTS	P=0.176	P=0.390	P=0.266N	P=0.545	P=0.417H	P=0.588	P=0.355	P=0.584N
			P=0.500N	P=0.309			P=0.500	P=0.500H
			P=0.248H	P=0.500			P=0.339	P=0.691H

SL 035666

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 4
VERSION: 11/13/84T
RUN DATE: 02/20/85

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
HEMATOPOIETIC SYSTEM ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	1/50 (2)	0/50 (0)	2/50 (4)	2/50 (4)	0/50 (0)	3/50 (6)	0/50 (0)
ADJUSTED (b)	4.3%	2.3%	0.0%	7.4%	6.5%	0.0%	13.9%	0.0%
TERMINAL (c)	0/21 (0)	0/22 (0)	0/17 (0)	0/15 (0)	0/19 (0)	0/20 (0)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	103	70		81	85		41	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.253		P=0.549N	P=0.353	P=0.296N		P=0.422	P=0.286N
INCIDENTAL TUMOR TEST	P=0.226	P=0.261	P=0.514N	P=0.365	P=0.146N	P=0.528	P=0.089	P=0.151N
COCHRAN-ARMITAGE TREND		P=0.292	P=0.573N	P=0.318		P=0.596	P=0.571	P=0.109
FISHER EXACT TESTS	P=0.360	P=0.360	P=0.527N	P=0.405	P=0.202N	P=0.640	P=0.109	(a)
			P=0.500N	P=0.500			P=0.500	P=0.248N
			P=0.500N	P=0.500			P=0.121	(a)
HEMATOPOIETIC SYSTEM ALL LYMPHOMAS ALL LEUKEMIAS								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	2/50 (4)	0/50 (0)	2/50 (4)	3/50 (6)	2/50 (4)	4/50 (8)	2/50 (4)
ADJUSTED (b)	4.3%	6.3%	0.0%	7.4%	10.2%	5.4%	15.9%	9.3%
TERMINAL (c)	0/21 (0)	0/22 (0)	0/17 (0)	0/15 (0)	0/19 (0)	0/20 (0)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	103	70		81	85	19	41	79
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.253		P=0.549N	P=0.353	P=0.544N		F=0.401	P=0.590N
INCIDENTAL TUMOR TEST	P=0.226	P=0.500	P=0.280N	P=0.558	P=0.287N	P=0.471	P=0.268	P=0.622
COCHRAN-ARMITAGE TREND		P=0.528	P=0.573N	P=0.318		P=0.536N	P=0.587	P=0.271N
FISHER EXACT TESTS	P=0.360	P=0.622	P=0.266N	P=0.572	P=0.417N	P=0.588	P=0.355	P=0.584N
			P=0.500N	P=0.500			P=0.500	P=0.500N
			P=0.248N	P=0.691N			P=0.339	P=0.691N

SL 035667

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

PAGE: 5
VERSION: 11/13/84T
RUN DATE: 02/20/85

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

DOSE IN GM/KG	MALE				FEMALE			
	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
FORESTOMACH SQUAMOUS CELL CARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	3/50 (6)	2/50 (4)	0/50 (0)	0/50 (0)	0/48 (0)	0/50 (0)	0/49 (0)
ADJUSTED (b)	8.2%	11.5%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%
TERMINAL (c)	0/21 (0)	2/22 (9)	0/17 (0)	0/15 (0)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	87	88	30					
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.155N		P=0.588N	P=0.225N	(a)		(a)	(a)
		P=0.143N	P=0.583N	P=0.201N		(a)	(a)	(a)
INCIDENTAL TUMOR TEST	P=0.071N		P=0.416N	P=0.225N	(a)		(a)	(a)
		P=0.054N	P=0.375N	P=0.199N		(a)	(a)	(a)
COCHRAN-ARMITAGE TREND	P=0.082N	P=0.082N			(a)	(a)		
FISHER EXACT TESTS			P=0.500N	P=0.122N			(a)	(a)
			P=0.500N	P=0.122N			(a)	(a)

FORESTOMACH
SQUAMOUS CELL PAPILLOMA
SQUAMOUS CELL CARCINOMA

<u>TUMOR RATES</u>								
OVERALL (a)	3/50 (6)	3/50 (6)	2/50 (4)	0/50 (0)	0/50 (0)	0/48 (0)	0/50 (0)	0/49 (0)
ADJUSTED (b)	8.2%	11.5%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%
TERMINAL (c)	0/21 (0)	2/22 (9)	0/17 (0)	0/15 (0)	0/19 (0)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	87	88	30					
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.155N		P=0.588N	P=0.225N	(a)		(a)	(a)
		P=0.143N	P=0.583N	P=0.201N		(a)	(a)	()
INCIDENTAL TUMOR TEST	P=0.071N		P=0.416N	P=0.225N	(a)		(a)	(a)
		P=0.054N	P=0.375N	P=0.199N		(a)	(a)	(a)
COCHRAN-ARMITAGE TREND	P=0.082N	P=0.082N			(a)	(a)		
FISHER EXACT TESTS			P=0.500N	P=0.122N			(a)	(a)
			P=0.500N	P=0.122N			(a)	(a)

SL 035668

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDs CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: R7-01UM R7-01VM R7-01LM R7-01HM R7-01UF R7-01VF R7-01LF R7-01HF

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VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
KIDNEY NOS ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	1/50 (2)	6/50 (12)	3/50 (6)	1/50 (2)	0/50 (0)	1/50 (2)	1/49 (2)
ADJUSTED (b)	0.0%	4.5%	32.2%	17.3%	5.3%	0.0%	2.1%	6.7%
TERMINAL (c)	0/21 (0)	1/22 (5)	5/17 (29)	2/15 (13)	1/19 (5)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)		105	98	92	105		35	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.061		P=0.008	P=0.065	P=0.509		P=0.696	P=0.610
INCIDENTAL TUMOR TEST	P=0.056	P=0.124	P=0.026	P=0.179	P=0.633N	P=0.293	P=0.508	P=0.424
COCHRAN-ARMITAGE TREND		P=0.122	P=0.007	P=0.067		P=0.310	P=0.723N	P=0.750
FISHER EXACT TESTS	P=0.146	P=0.274	P=0.026	P=0.179	P=0.634	P=0.327	P=0.469	P=0.567
			P=0.013	P=0.121			P=0.753N	P=0.748
			P=0.056	P=0.309			P=0.500	P=0.495
KIDNEY NOS TUBULAR-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	0/50 (0)	6/50 (12)	1/50 (2)	1/50 (2)	0/50 (0)	0/50 (0)	1/49 (2)
ADJUSTED (b)	0.0%	0.0%	32.2%	6.7%	5.3%	0.0%	0.0%	6.7%
TERMINAL (c)	0/21 (0)	0/22 (0)	5/17 (29)	1/15 (7)	1/19 (5)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)			98	104	105			101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.259		P=0.008	P=0.433	P=0.520		P=0.609N	P=0.610
INCIDENTAL TUMOR TEST	P=0.244	P=0.246	P=0.007	P=0.424	P=0.640	P=0.223	(a)	P=0.424
COCHRAN-ARMITAGE TREND		P=0.243	P=0.007	P=0.433		P=0.319	P=0.609N	P=0.750
FISHER EXACT TESTS	P=0.406	P=0.406	P=0.007	P=0.424	P=0.665	P=0.266	(a)	P=0.567
			P=0.013	P=0.500			P=0.500N	P=0.748
			P=0.013	P=0.500			(a)	P=0.495

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: R7-01UM R7-01VM R7-01LM R7-01HM R7-01UF R7-01VF R7-01LF R7-01HF

PAGE: 7
VERSION: 11/13/84
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
KIDNEY NOS								
TUBULAR-CELL ADENOMA								
TUBULAR-CELL ADENOCARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	0/50 (0)	0/50 (0)	6/50 (12)	2/50 (4)	1/50 (2)	0/50 (0)	0/50 (0)	1/49 (2)
ADJUSTED (b)	0.0%	0.0%	32.2%	10.9%	5.3%	0.0%	0.0%	6.7%
TERMINAL (c)	0/21 (0)	0/22 (0)	5/17 (29)	1/15 (7)	1/19 (5)	0/20 (0)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)			98	92	105			101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.132		P=0.008	P=0.160	P=0.520		P=0.609N	P=0.610
INCIDENTAL TUMOR TEST	P=0.123	P=0.125	P=0.007	P=0.158	P=0.640	P=0.223	(a) P=0.609N	P=0.424
COCHRAN-ARMITAGE TREND	P=0.252	P=0.122	P=0.007	P=0.163	P=0.665	P=0.319	(a) P=0.609N	P=0.750
FISHER EXACT TESTS		P=0.252	P=0.013	P=0.158		P=0.266	P=0.500N	P=0.567
			P=0.013	P=0.247			(a) P=0.500N	P=0.748
				P=0.247				P=0.495
PITUITARY								
ADENOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	16/46 (35)	11/42 (26)	7/45 (16)	10/38 (26)	13/47 (28)	13/46 (28)	9/47 (19)	8/46 (17)
ADJUSTED (b)	55.4%	42.0%	35.0%	50.6%	61.6%	54.8%	57.9%	50.6%
TERMINAL (c)	9/21 (43)	8/22 (36)	5/17 (29)	6/15 (40)	11/19 (58)	10/20 (50)	5/11 (45)	2/7 (29)
FIRST INCIDENCE (WEEKS)	90	84	86	81	100	74	93	71
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.380N		P=0.103N	P=0.497N	P=0.313		P=0.472	P=0.358
INCIDENTAL TUMOR TEST	P=0.421N	P=0.277	P=0.419N	P=0.294	P=0.431N	P=0.302	F=0.437	P=0.373
COCHRAN-ARMITAGE TREND	P=0.193N	P=0.287	P=0.074N	P=0.571N	P=0.431N	P=0.471N	P=0.492N	P=0.526N
FISHER EXACT TESTS		P=0.542N	P=0.334N	P=0.300	P=0.139N	P=0.127N	P=0.582N	P=0.485N
			P=0.030N	P=0.276N			P=0.233N	P=0.175N
			P=0.169N	P=0.594			P=0.215N	P=0.166N

SL 035670

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 8
VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PITUITARY ADENOMA, NOS CARCINOMA, NOS								
<u>TUMOR RATES</u>								
OVERALL (a)	17/46 (37)	11/42 (26)	7/45 (16)	10/38 (26)	13/47 (28)	14/46 (30)	9/47 (19)	8/46 (17)
ADJUSTED (b)	56.4%	42.0%	35.0%	50.6%	61.6%	56.9%	57.9%	50.6%
TERMINAL (c)	9/21 (43)	8/22 (36)	5/17 (29)	6/15 (40)	11/19 (58)	10/20 (50)	5/11 (45)	2/7 (29)
FIRST INCIDENCE (WEEKS)	66	84	86	81	100	74	93	71
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.305N		P=0.073N	P=0.424N	P=0.313		P=0.472	P=0.358
INCIDENTAL TUMOR TEST	P=0.311N	P=0.277	P=0.419N	P=0.294	P=0.431N	P=0.387	P=0.522	P=0.459
COCHRAN-ARMITAGE TREND	P=0.138N	P=0.287	P=0.044N	P=0.448N	P=0.139N	P=0.353N	P=0.492N	P=0.526N
FISHER EXACT TESTS		P=0.542N	P=0.334N	P=0.300		P=0.084N	P=0.466N	P=0.364N
			P=0.018N	P=0.211N			P=0.233N	P=0.175N
			P=0.169N	P=0.594			P=0.154N	P=0.111N
ADRENAL CORTICAL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	11/50 (22)	9/50 (18)	11/49 (22)	11/50 (22)	13/49 (27)	16/50 (32)	13/50 (26)	19/49 (39)
ADJUSTED (b)	40.3%	32.4%	41.1%	54.4%	54.8%	55.6%	66.3%	92.7%
TERMINAL (c)	7/21 (33)	5/22 (23)	3/17 (18)	7/15 (47)	9/19 (47)	9/20 (45)	6/11 (55)	6/7 (86)
FIRST INCIDENCE (WEEKS)	78	88	80	36	82	61	75	45
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.192		P=0.376	P=0.227	P=0.001		P=0.180	P=0.001
INCIDENTAL TUMOR TEST	P=0.239	P=0.094	P=0.215	P=0.115	P=0.017	P=0.008	P=0.365	P=0.011
COCHRAN-ARMITAGE TREND	P=0.548	P=0.109	P=0.491	P=0.364	P=0.114	P=0.100	P=0.303	P=0.030
FISHER EXACT TESTS		P=0.356	P=0.327	P=0.160		P=0.272	P=0.484N	P=0.127
			P=0.574	P=0.595N			P=0.567N	P=0.141
			P=0.382	P=0.401			P=0.330N	P=0.310

SL 035671

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 9

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ADRENAL PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	9/50 (18)	13/50 (26)	6/49 (12)	3/50 (6)	3/49 (6)	8/50 (16)	4/50 (8)	1/49 (2)
ADJUSTED (b)	34.8%	42.9%	31.6%	18.7%	11.2%	30.4%	18.8%	6.7%
TERMINAL (c)	6/21 (29)	7/22 (32)	5/17 (29)	2/15 (13)	1/19 (5)	4/20 (20)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	87	74	84	103	83	84	87	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.154N		P=0.472N	P=0.193N	P=0.427N		P=0.387	P=0.468N
INCIDENTAL TUMOR TEST	P=0.150N	P=0.028N	P=0.154N	P=0.052N	P=0.200N	P=0.080N	P=0.394N	P=0.118N
COCHRAN-ARMITAGE TREND		P=0.023N	P=0.389N	P=0.208N		P=0.009N	P=0.481	P=0.249N
FISHER EXACT TESTS	P=0.046N	P=0.004N	P=0.128N	P=0.043N	P=0.251N	P=0.011N	P=0.178N	P=0.020N
			P=0.303N	P=0.061N			P=0.511	P=0.309N
			P=0.068N	P=0.007N			P=0.179N	P=0.017N
ALL ADRENAL SITES PHEOCHROMOCYTOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	9/50 (18)	13/50 (26)	6/49 (12)	3/50 (6)	4/49 (8)	8/50 (16)	4/50 (8)	1/49 (2)
ADJUSTED (b)	34.8%	42.9%	31.6%	18.7%	16.1%	30.4%	18.8%	6.7%
TERMINAL (c)	6/21 (29)	7/22 (32)	5/17 (29)	2/15 (13)	2/19 (11)	4/20 (20)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	87	74	84	103	83	84	87	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.154N		P=0.472N	P=0.193N	P=0.323N		P=0.498	P=0.372N
INCIDENTAL TUMOR TEST	P=0.150N	P=0.028N	P=0.154N	P=0.052N	P=0.138N	P=0.080N	P=0.394N	P=0.118N
COCHRAN-ARMITAGE TREND		P=0.023N	P=0.389N	P=0.208N		P=0.009N	P=0.592	P=0.190N
FISHER EXACT TESTS	P=0.046N	P=0.004N	P=0.128N	P=0.043N	P=0.145N	P=0.011N	P=0.178N	P=0.020N
			P=0.303N	P=0.061N			P=0.631N	P=0.181N
			P=0.068N	P=0.007N			P=0.179N	P=0.017N

SL 035672

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

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VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
ALL ADRENAL SITES								
PHEOCHROMOCYTOMA								
PHEOCHROMOCYTOMA, MALIGNANT								
<u>TUMOR RATES</u>								
OVERALL (a)	10/50 (20)	13/50 (26)	6/49 (12)	3/50 (6)	4/49 (8)	9/50 (18)	6/50 (12)	1/49 (2)
ADJUSTED (b)	39.1%	42.9%	31.6%	18.7%	16.1%	33.1%	26.0%	6.7%
TERMINAL (c)	7/21 (33)	7/22 (32)	5/17 (29)	2/15 (13)	2/19 (11)	4/20 (20)	1/11 (9)	0/7 (0)
FIRST INCIDENCE (WEEKS)	87	74	84	103	83	84	87	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.100N	P=0.028N	P=0.373N	P=0.135N	P=0.359N	P=0.073N	P=0.241	P=0.372N
INCIDENTAL TUMOR TEST	P=0.096N	P=0.023N	P=0.154N	P=0.052N	P=0.127N	P=0.004N	P=0.564N	P=0.084N
COCHRAN-ARMITAGE TREND	P=0.026N	P=0.004N	P=0.296N	P=0.146N	P=0.168N	P=0.008N	P=0.350	P=0.190N
FISHER EXACT TESTS			P=0.128N	P=0.043N			P=0.252N	P=0.009N
			P=0.220N	P=0.036N			P=0.383	P=0.181N
			P=0.068N	P=0.007N			P=0.288N	P=0.009N
THYROID								
C-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	8/49 (16)	4/48 (8)	1/48 (2)	5/49 (10)	15/49 (31)	5/49 (10)	1/49 (2)
ADJUSTED (b)	19.0%	33.9%	21.4%	6.7%	24.2%	60.8%	32.7%	6.7%
TERMINAL (c)	4/21 (19)	7/22 (32)	3/17 (18)	1/15 (7)	4/19 (21)	11/20 (55)	2/11 (18)	0/7 (0)
FIRST INCIDENCE (WEEKS)	104	93	99	104	97	62	93	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.262N	P=0.038N	P=0.525	P=0.287N	P=0.352N	P=0.006N	P=0.334	P=0.348N
INCIDENTAL TUMOR TEST	P=0.270N	P=0.038N	P=0.312N	P=0.055N	P=0.134N	P=0.001N	P=0.127N	P=0.013N
COCHRAN-ARMITAGE TREND	P=0.146N	P=0.011N	P=0.525	P=0.287N	P=0.090N	P=0.001N	P=0.541	P=0.194N
FISHER EXACT TESTS			P=0.299N	P=0.057N			P=0.053N	P=0.003N
			P=0.643N	P=0.181N			P=0.630N	P=0.102N
			P=0.188N	P=0.017N			P=0.011N	P=0.001N

SL 035673

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 11

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
THYROID								
C-CELL ADENOMA								
C-CELL CARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	4/48 (8)	9/49 (18)	4/48 (8)	1/48 (2)	5/49 (10)	15/49 (31)	5/49 (10)	1/49 (2)
ADJUSTED (b)	19.0%	36.3%	21.4%	6.7%	24.2%	60.8%	32.7%	6.7%
TERMINAL (c)	4/21 (19)	7/22 (32)	3/17 (18)	1/15 (7)	4/19 (21)	11/20 (55)	2/11 (18)	0/7 (0)
FIRST INCIDENCE (WEEKS)	104	93	99	104	97	62	93	101
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.262N		P=0.525	P=0.287N	P=0.352N		P=0.334	P=0.348N
		P=0.022N	P=0.224N	P=0.038N		P=0.006N	P=0.127N	P=0.013N
INCIDENTAL TUMOR TEST	P=0.270N		P=0.525	P=0.287N	P=0.134N		P=0.541	P=0.194N
		P=0.022N	P=0.211N	P=0.039N		P<0.001N	P=0.053N	P=0.003N
COCHRAN-ARMITAGE TREND	P=0.146N	P=0.005N			P=0.090N	P<0.001N		
FISHER EXACT TESTS			P=0.643N	P=0.181N			P=0.630N	P=0.102N
			P=0.125N	P=0.009N			P=0.011N	P<0.001N
PANCREATIC ISLETS								
ISLET-CELL ADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	3/49 (6)	2/50 (4)	0/50 (0)	0/50 (0)	3/50 (6)	1/48 (2)	0/49 (0)
ADJUSTED (b)	4.8%	12.0%	11.8%	0.0%	0.0%	14.1%	3.2%	0.0%
TERMINAL (c)	1/21 (5)	1/22 (5)	2/17 (12)	0/15 (0)	0/19 (0)	2/20 (10)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	105	98	104			101	87	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.454N		P=0.425	P=0.567N	P=0.715		F=0.507	(a)
		P=0.152N	P=0.602N	P=0.203N		P=0.153N	P=0.456N	P=0.294N
INCIDENTAL TUMOR TEST	P=0.454N		P=0.425	P=0.567N	P=0.670N		P=0.519	(a)
		P=0.155N	P=0.590N	P=0.213N		P=0.078N	P=0.365N	P=0.221N
COCHRAN-ARMITAGE TREND	P=0.360N	P=0.079N			P=0.727	P=0.063N		
FISHER EXACT TESTS			P=0.500	P=0.500N			P=0.490	(a)
			P=0.491N	P=0.118N			P=0.324N	P=0.125N

SL 035674

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CDDS CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: R7-01UM R7-01VM R7-01LM R7-01HM R7-01UF R7-01VF R7-01LF R7-01HF

PAGE: 12
VERSION: 11/13/84T
RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
PANCREATIC ISLETS								
ISLET-CELL ADENOMA								
ISLET-CELL CARCINOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	4/49 (8)	2/50 (4)	0/50 (0)	0/50 (0)	3/50 (6)	1/48 (2)	0/49 (0)
ADJUSTED (b)	4.8%	16.1%	11.8%	0.0%	0.0%	14.1%	3.2%	0.0%
TERMINAL (c)	1/21 (5)	2/22 (9)	2/17 (12)	0/15 (0)	0/19 (0)	2/20 (10)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)	105	98	104			101	87	
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.454N		P=0.425	P=0.567N	P=0.715		P=0.507	(e)
INCIDENTAL TUMOR TEST	P=0.454N	P=0.082N	P=0.448N	P=0.127N		P=0.153N	P=0.456N	P=0.294N
COCHRAN-ARMITAGE TREND		P=0.083N	P=0.425	P=0.567N	P=0.670N	P=0.078N	P=0.519	(e)
FISHER EXACT TESTS	P=0.360N	P=0.035N	P=0.435N	P=0.133N	P=0.727	P=0.063N	P=0.365N	P=0.221N
			P=0.500	P=0.500N			P=0.490	(e)
			P=0.329N	P=0.057N			P=0.324N	P=0.125N
MAMMARY GLAND								
ALL TUMORS								
<u>TUMOR RATES</u>								
OVERALL (a)	2/50 (4)	0/50 (0)	0/50 (0)	1/50 (2)	17/50 (34)	16/50 (32)	9/50 (18)	14/50 (28)
ADJUSTED (b)	6.8%	0.0%	0.0%	5.0%	50.0%	48.2%	48.6%	69.5%
TERMINAL (c)	0/21 (0)	0/22 (0)	0/17 (0)	0/15 (0)	5/19 (26)	6/20 (30)	3/11 (27)	3/7 (43)
FIRST INCIDENCE (WEEKS)	95			96	62	33	74	80
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.490N		P=0.313N	P=0.656N	P=0.312		P=0.254N	P=0.345
INCIDENTAL TUMOR TEST	P=0.576N	P=0.220	(e)	P=0.426		P=0.202	P=0.352N	P=0.229
COCHRAN-ARMITAGE TREND		P=0.200	P=0.320N	P=0.722	P=0.257N	P=0.372N	P=0.066N	P=0.273N
FISHER EXACT TESTS	P=0.360N	P=0.269	(e)	P=0.398	P=0.286N	P=0.366N	P=0.106N	P=0.367N
			P=0.248N	P=0.500N			P=0.055N	P=0.333N
			(e)	P=0.500			P=0.083N	P=0.414N

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

CBDs CONTRACT: 600244 PAPANICOLAOU
CHEMICAL: C04546 TRICHLOROETHYLENE
GROUP IDS: R7-01UM R7-01VM R7-01LM R7-01HM R7-01UF R7-01VF R7-01LF R7-01HF

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	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
MAMMARY GLAND FIBROADENOMA								
<u>TUMOR RATES</u>								
OVERALL (a)	1/50 (2)	0/50 (0)	0/50 (0)	0/50 (0)	17/50 (34)	14/50 (28)	7/50 (14)	11/50 (22)
ADJUSTED (b)	3.8%	0.0%	0.0%	0.0%	50.0%	45.1%	39.4%	56.1%
TERMINAL (c)	0/21 (0)	0/22 (0)	0/17 (0)	0/15 (0)	5/19 (26)	6/20 (30)	2/11 (18)	2/7 (29)
FIRST INCIDENCE (WEEKS)	102				62	33	74	80
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE	P=0.342N	(a)	P=0.573N	P=0.597N	P=0.452N	P=0.335	P=0.117N	P=0.523N
INCIDENTAL TUMOR TEST	P=0.375N	(a)	P=0.573N	P=0.654N	P=0.076N	P=0.289N	P=0.021N	P=0.095N
COCHRAN-ARMITAGE TREND	P=0.269N	(a)	P=0.500N	P=0.500N	P=0.097N	P=0.271N	P=0.017N	P=0.133N
FISHER EXACT TESTS			(a)	(a)			P=0.070N	P=0.323N
UTERUS NOS ENDOMETRIAL STROMAL POLYP								
<u>TUMOR RATES</u>								
OVERALL (a)					4/50 (8)	6/49 (12)	1/49 (2)	6/50 (12)
ADJUSTED (b)					14.5%	19.8%	4.3%	24.9%
TERMINAL (c)					2/19 (11)	2/20 (10)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)					54	61	90	79
<u>STATISTICAL TESTS (d)</u>								
LIFE TABLE					P=0.161	P=0.365	P=0.287N	P=0.205
INCIDENTAL TUMOR TEST					P=0.330	P=0.379N	P=0.122N	P=0.386
COCHRAN-ARMITAGE TREND					P=0.283	P=0.558N	P=0.269N	P=0.417
FISHER EXACT TESTS							P=0.039N	P=0.414N
							P=0.188N	P=0.370
							P=0.056N	P=0.606N

SL 035676

INTERCURRENT MORTALITY ADJUSTED TUMOR INCIDENCE ANALYSIS FOR RATS

BDS CONTRACT: 600244 PAPANICOLAOU

CHEMICAL: C04546 TRICHLOROETHYLENE

GROUP IDS:

R7-01UM

R7-01VM

R7-01LM

R7-01HM

R7-01UF

R7-01VF

R7-01LF

R7-01HF

PAGE: 14

VERSION: 11/13/84T

RUN DATE: 02/20/85

	MALE				FEMALE			
DOSE IN GM/KG	0.0	0.0	0.5	1.0	0.0	0.0	0.5	1.0
UTERUS NOS								
ADENOCARCINOMA, NOS								
TUMOR RATES								
OVERALL (a)					0/50 (0)	1/49 (2)	5/49 (10)	2/50 (4)
ADJUSTED (b)					0.0%	5.0%	32.7%	19.3%
TERMINAL (c)					0/19 (0)	1/20 (5)	3/11 (27)	1/7 (14)
FIRST INCIDENCE (WEEKS)						105	87	98
STATISTICAL TESTS (d)								
LIFE TABLE					P=0.068		P=0.011	P=0.113
INCIDENTAL TUMOR TEST					P=0.128	P=0.119	P=0.030	P=0.226
COCHRAN-ARMITAGE TREND					P=0.239	P=0.233	P=0.013	P=0.192
FISHER EXACT TESTS						P=0.421	P=0.055	P=0.305
							P=0.027	P=0.247
							P=0.102	P=0.508
UTERUS NOS								
ENDOMETRIAL STROMAL POLYP								
ENDOMETRIAL STROMAL SARCOMA								
TUMOR RATES								
OVERALL (a)					4/50 (8)	6/49 (12)	1/49 (2)	6/50 (12)
ADJUSTED (b)					14.5%	19.8%	4.3%	24.9%
TERMINAL (c)					2/19 (11)	2/20 (10)	0/11 (0)	0/7 (0)
FIRST INCIDENCE (WEEKS)					54	61	90	79
STATISTICAL TESTS (d)								
LIFE TABLE					P=0.161		P=0.287N	P=0.205
INCIDENTAL TUMOR TEST					P=0.330	P=0.365	P=0.122N	P=0.396
COCHRAN-ARMITAGE TREND					P=0.283	P=0.379N	P=0.269N	P=0.417
FISHER EXACT TESTS						P=0.558N	P=0.039N	P=0.414N
							P=0.188N	P=0.370
							P=0.056N	P=0.606N

- a) Number of tumor-bearing animals/number of animals examined at the site (percent).
b) Kaplan-Meier estimated lifetime tumor incidence after adjusting for intercurrent mortality.
c) Observed tumor incidence at terminal kill.
d) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between that dosed group and the controls. The life table analysis regards tumors in animals dying prior to terminal kill as being (directly or indirectly) the cause of death. The incidental tumor test regards those lesions as non-fatal. The Cochran-Armitage and Fisher's exact tests compare directly the overall incidence rates. A negative trend is indicated by N.
e) Differences not significant; no tumors observed in dosed group or control group.

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