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Evaluation of Carcinogenic, Teratogenic, and Mutagenic Activities of Selected Pesticides and Industrial Chemicals. Volume I. Carcinogenic Study

Bionetics Research Labs, Incorporated

Prepared for
National Cancer Institute

August 1968

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Concept - Dr. Paul Kotin and Dr. Hans Falk, NIH
Initial Planning - Dr. A. J. Pallotta and Dr. E. Ross Hart, BRL

16. Abstracts: Vol. I evaluates the carcinogenic potential of 130 commercial pesticides which have been used in part as insecticides, herbicides, & fungicides. A total of over 20,000 mice were used in the experiment. Eighteen virgin males & 18 virgin females from hybrid strains (B6AKF1 and B6C3F1) were selected for a test on each compound for each route of administration used. An equal number of mice served as untreated controls for both routes & another group of 36 served as vehicle controls for each solvent. Two types of 18-month studies were carried out: 1) a single s.c. injection in 0.05 ml of suspension in nape of neck at 28th day of age; 2) daily oral stomach tube administration from 7th to 28th day of age, and thereafter mixed in feed. MTD calculated on average body weight per group was determined in a preliminary acute toxicity study. No doses above 1,000 mg/kg were studied, except N-Propyl isome at 2,000 mg/kg. Urethane was studied at a total dose of 3 mg/mouse (cont.)

17. Key Words and Document Analysis. 17a. Descriptors

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Herbicides
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Reticulum Cell Sarcoma
Pulmonary Neoplasms
DDT
Chlorohydrocarbons
Thiocarbamates
Environments
Halohydrocarbons

17b. Identifiers/Open-Ended Terms
B6AKF1 Hybrid Mice
B6C3F1 Hybrid Mice
Dual clean/dirty corridor system
Pesticide analysis
Pesticide Residue

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16. Abstracts (continued)

(158 mg/kg). A low incidence of spontaneous neoplastic disease was observed in both control groups. All compounds used as positive controls when administered orally were carcinogenic. Only urethane and ethylene imine were carcinogenic by s.c. route. Each test compound category had at least one active member with the exception of the Herbicide S-Triazine group. The most predominant tumor was the hepatoma. The detailed presentation of the pathologic findings invites further analysis by the reader.

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VOLUME I

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PREFACE

This study, Evaluation of the Carcinogenic, Teratogenic and Mutagenic Activities of Selected Pesticides and Industrial Chemicals," was initiated under Contract PH 43-64-57, and continued under Contract PH 43-67-735 with the National Cancer Institute, National Institutes of Health. Planning was started in 1963 and the work completed by August 1968.

The original concept for the necessity of such a study arose in the minds of Drs. Paul Kotin and Hans Falk. The former was Associate Director, Carcinogenesis Studies Branch, National Cancer Institute, National Institutes of Health. To these two workers and to Project Officers appointed by Dr. Kotin, notably Drs. M. Klein, J. DiPaolo, I. Mitchell and R. Bates, a great deal of thanks is due for their continued helpful criticism, guidance and advice during the entire experimental study. Final details in individual parts of the study remained in the hands of the scientific staff of BRL. The joint initial planning of the study was between the above mentioned workers and Drs. A. J. Pallotta and E. Ross Hart of BRL. In previous reports individual names have not been mentioned; the following persons should rightfully be acknowledged for their participation in this study.

The chemistry aspects of the study were under the direction of Dr. L. Fishbein assisted by Mr. Walt Zielinski, Jr., and Mr. R. Thomas with the technical assistance of Mr. J. Fawkes, Miss M. Cavanaugh, Miss M. Liu, Mr. T. Welsko, Mrs. P. Jones and Mr. L. Martin.

The teratogenesis studies were conducted under the supervision of Dr. K. D. Courtney with the technical assistance of Miss. S. Sieber, Mrs. M. E. Bryan and Mrs. K. H. Fields.

The experimental microbial genetics studies were conducted under the direction of Dr. R. D'Giovanni Donnelly with the assistance of Mrs. S. Kolbye.

Carcinogenic screening aspects were under the supervision of Dr. L. Petrucelli, assisted by Mr. P. Davenport, Mr. J. Carter and Mr. N. Acuff with the technical assistance of Mr. J. Farmer.

Pathology studies were directed by Dr. J.R.M. Innes, assisted by Dr. B. Ulland, Dr. N. Valerio and Mr. D. Cameron. Hematologic examinations were performed by Dr. J. Switzer and Mrs. B. Rininger. Statistical analyses were done by Mrs. G. Spitz.

Finally, the monumental task of preparing all the interim reports and this final report could not have been accomplished without the critical eyes and technical writing skills of Mr. R. Guttmacher and Miss C. Kalk.

INTRODUCTION

By: Dr. Paul Kotin, Director
National Institute of Environmental Health Sciences
Research Triangle Park, North Carolina

The design of any broad-base bioassay involving a large number of chemical compounds requires a number of compromises to assure the procurement of maximal information regarding the specific endpoint sought. In the present study, the alternatives - large numbers of animals for study of a few compounds in depth or the bioassay of a large number of compounds using only few groups each - were considered. In the light of realities, the latter approach was selected because the large number of classes of chemicals in use as pesticides, let alone the much larger number of compounds, directed us to a system of priorities for this investigation based on (a) the degree of suspicion on the basis of chemical structure and carcinogenicity, (b) evidence of toxicity described in the literature suggesting potential hazards to man, or (c) the overwhelming worldwide use of the chemicals.

The relationship of mutagenesis, teratogenesis and carcinogenesis to one another has not been clarified as yet on the fundamental levels; however, sufficient concordances exist to make the selection of these separate endpoints in a single study desirable.

The selection of species and strain was similarly a matter of compromise, particularly since most of the chemicals had been tested in rats over long-term periods. We felt that the availability of these data on rats provided a bonus for future evaluations resulting in our selection of mice. Agreements and disagreements in the results would contribute to the general body of knowledge relating to species specificity and where the data were contradictory the possibility of exploiting these for comparative biochemical and pharmacological studies seemed very attractive. The rat and mouse show numerous areas of congruity in past studies in carcinogenesis, while admittedly the many differences which have been reported in the literature have distressed us retrospectively in proportion to our understanding of the underlying basic mechanisms of metabolism.

In the final design of the protocol, we were not unmindful of potential criticism based on the limited number of dose levels and animals used per sex and strain; however, great reliance was placed on our use of positive controls and indeed the data clearly indicate that this concept provided the distinctions that were anticipated.

We recognize that all workers in the field of carcinogenesis should strive to establish experimental approaches and protocols that would permit quantitative as well as qualitative extrapolation of laboratory findings to man. The latter has been only partially achieved, the former not at all. Within the framework of a primary screen, we believe the data are sufficiently informative to warrant both our discussion and conclusions included in this manuscript. They should stimulate confirmatory research and refinements by other investigators while, at the same time, alerting manufacturers and users to the until now unsuspected potential hazard to their health as well as the health of the general population.

The initiated are aware and the less initiated quickly become aware that all experimental chemical carcinogenesis studies bear two categories, occasionally closer to art than to science, often hotly disputed, and always highly personal. They are 1. the pathologist's criteria and classification of tumors - - (and let us remember that the pathologist's interpretation is an ultimate assay) and 2. the experimental design used - - (which includes selection of animal species, mode of exposure to potential carcinogens, duration of exposure, group sizes and so forth).

For these reasons and because of the emotional charge carried by these reasons, the viewpoint of the senior pathologist of this study, Dr. J.R.M. Innes, is presented in this section in order to make clear the bases of this study.

THE PROBLEM OF EVALUATION OF CHEMICAL CARCINOGENESIS IN EXPERIMENTAL ANIMALS

By: J. R. M. Innes, Sc.D., D.Sc., Ph.D., M.R.C.V.S., F.C. Path., F.R.S.E.

The evaluation of chemical carcinogenesis has been dubious with regard to extrapolating data derived from animals to man.

This applies not only to cancer, but to experimental studies of other human diseases - pharmocologic, physiologic, chemotherapeutic, neurologic, virologic and pathologic. A special report by the National Academy of Sciences entitled 'Problems in the Evaluation of Carcinogenic Hazard from the Use of Food Additives [1] is devoted to this subject. The publication contains the views of many well-known experimentalists who have contributed to evaluating techniques and data obtained in carcinogenic assays. Additional information is contained in the Cantarow Report[2] to the NCI. A few of the highly important issues brought out in these reports are of significance to this report and are summarized.

It has been fully established that differences in carcinogenic responses are associated with the species and strain of experimental animal used, the organs or tissues affected by a tumor, the dosage of the compound used and the route of administration. When all these factors are considered, it is found that past methodology has revealed only compounds which produce easily detectable degrees of carcinogenesis. One of the great issues is how to detect compounds which are weak carcinogens. While there are no arguments about the carcinogenic activity of such compounds as some polycylic aromatic hydrocarbons, urethane, ethionine, senecio alkaloids, dimethylamine nitrosamine and many others, there is debate on the activity of chemicals reported to be weak carcinogens.

Inescapably, evaluation of pathologic lesions in any experimental animal is a crux of the problem. The pathologist must possess a high degree of competence, not only in diagnosis of neoplastic conditions in experimental animals, but in all incidental diseases which occur in any particular species, strain and sex during a life span. As a baseline, there must be profound knowledge derived from necropsy examination and histologic study on large numbers of untreated animals of whatever species and strain are used. This has been accomplished in the two hybrid strains of mice used in our project. No prior study of this magnitude has been done on these two strains and therefore, the data which are being presented have a formidable value in the field of experimental pathology.

Of available laboratory animals used in such studies in the past, most have been done on mice. For example, the referenced NAS report states that 283 publications dealt with the carcinogenic activity of dibenzanthracene; 177 were done in mice, 57 in rats, 19 in rabbits, 18 in fowls, 4 in guinea pigs and 2 in monkeys. The reasons are obvious. The small size of the mouse makes it easy to keep large numbers and there is ready availability of both well-known inbred strains and mice random-bred by commercial suppliers. High metabolic rate and brief life span are additional advantages.

No matter how many species are used in experimental work, the results cannot be extrapolated directly to man, i.e., to define what compounds would present hazards to man. This is true even if monkeys are used; they are simian, not human, primates. A chemical compound can be carcinogenic in one species and inactive in another. The hamster and guinea pig are relatively resistant to carcinogenic action of several compounds which produce tumors in rats and mice, though it is rare for compounds to be carcinogenic for hamsters and inactive for rats and mice. However, there are few known compounds which are active in mice and inactive in rats, or vice versa.

Under ideal conditions, where available funds and facilities are of no concern, carcinogenic assay could be planned using generous numbers of many different species of laboratory animals, perhaps also dogs and monkeys. But, in a massive attack such as in this screening project, where 130 pesticides were simultaneously tested in over 20,000 mice, this would be beyond economic reasonableness. Further, in such preliminary screening for carcinogenic action, the use of dogs and monkeys is prohibitive for several reasons. The cost would be so high that not enough animals could be used. More important, there is the question of time; dogs and monkeys would have to be kept under observation for 8-10 years or longer to achieve cancer incidence age.

Based on our experience in this study, much information can be obtained by using only mice. From the data obtained, subsequent experiments could be planned with attention to different dosage levels and to the use of other laboratory animals. Now that extensive knowledge has been gained of the incidence of spontaneous diseases (including tumors) in the two hybrid strains we chose, the use

of these in further carcinogenic studies should be continued. The question arises as to whether other inbred strains of mice should be included in concurrent experiments, preferable mice with a known low incidence, for example, of mammary and lung tumors, leukemia, and reticulum cell sarcoma. A cancer resistant strain[3] might also be employed.

Another problem concerns what numbers of animals should be used in any experimental group, and this was analyzed in the first report[1] mentioned (quoting Boyland and also Vos). In the present study 18 males and 18 females from each hybrid strain were arbitrarily selected for a test on each chemical compound for each route of administration. Whether these numbers were adequate should be apparent from our final pathologic evaluation.

It is clear that in the case of well-known carcinogenic compounds such as urethane, which was used as one positive control, no statistical analysis is necessary; the incidence of tumors in the mice was 100%. Tumors of the lungs, liver and Harderian gland occurred either singly or in combination with others. Our problem was to assess activity of border-line cases and this is a determination of great concern to all workers in the experimental cancer field.

In our project, virgin males and females from each hybrid strain were used. While this is the common practice in most experimental studies on cancer, it is well known that in female virgin mice, kept for 18 months or longer, there is a complete disruption of the estrous cycle and sexual functions. Consequently, it was not surprising to find in our experimental mice a variety of lesions (not neoplastic) at 18 months which affected the genital organs of both males and females.

It has been suggested before that a monogamous paired breeding colony should always be used in any experimental study of toxicity and carcinogenesis. If this is done, the sexual cycle in mice is normal and hormonal influences need not come into the picture. The effects of any compound on fertility can be observed and possible teratologic effects can be evaluated. In addition, pups from one generation may be maintained for 18 months to evaluate the effect of compound administration over their entire life span, including the period of lactation for those compounds which are excreted in the milk.[2] Although some experiments of this

type were conducted under this contract, economic considerations prohibited this approach in screening such a large number of compounds.

Finally, when mice are used for carcinogenic assay tests, just how do we decide that a compound is carcinogenic? For a compound such as urethane, there can be no doubt. For compounds with less striking results, the problem is more difficult. The incidence of all types of spontaneous tumors occurring in untreated mice because of their advanced age must be known as a baseline. Chemical compounds do not usually incite the production of new tumors but only an increase in incidence of tumors which occur spontaneously, and usually in one organ. Urethane is an exception, as shown in our tables. In the opinion of many, for a compound to be designated as carcinogenic it must produce a significant increase in the incidence of one tumor which affects predominantly one organ or tissue. One of the issues to be decided is what increase in incidence of such a tumor affecting one organ is significant? Another issue concerns the question of malignancy. If carcinogenicity is defined only in terms of production of malignant tumors, the fact that benign tumors may increase mortality is overlooked. More important, there are many "malignant" tumors in mice which do not metastasize via hematogenous or lymphatic paths, but they are transplantable. Further, hepatoma may kill without pulmonary metastasis, by local invasivness.

Since all of the factors mentioned above are controversial, we have attempted to present the data from this study in such detail, as suggested by Mantel[4], that it may be interpreted from several viewpoints, i.e., according to varying criteria of carcinogenicity.

We leave it to the reader to use it as he sees fit.

DESIGN OF EXPERIMENTAL PROCEDURE

Chemical Compounds Studied, Analytical Techniques Used and Purity

Table I presents the list of chemical compounds studied by code number. It includes common and chemical name, source and date received, label information and constants, how the chemicals were used and what analytical techniques were employed. Duplicate compounds studied were:

Compounds 069 and 126 (2-Mercaptobenzothiazole)

Compound 069 was studied at 215 mg/kg in 0.5% gelatin whereas compound 126 was studied at 1,000 mg/kg in DMSO subcutaneously.

Compounds 093 and 128 (2,6-dichloro-4-nitroaniline)

In the case of compound 093, the solvent DMSO was used, whereas in compound 128, 0.5% gelatin was used.

Compounds 027 and 092 (Piperonyl butoxide)

Compound 027 was studied at 100 mg/kg in corn oil subcutaneously and at 100 mg/kg orally, whereas compound 092 was studied at 1,000 mg/kg in corn oil subcutaneously and 464 mg/kg orally.

TABLE I

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
024	Simazine	2-Chloro-4,6-bis-(ethylamino)-1,3,5-triazine	Geigy 7/27/64	m.p. 224-225° Lot #FL-654ARS-1403A-64 99.1 %	U.A.R.	I.R.
025	Propazine	2-Chloro-4,6-bis(isopropylamino)-1,3,5-triazine	Geigy 7/27/64	98% Lot #FL-202ARS-1403A-64 m.p. 212-214°	U.A.R.	I.R.
026	Captan	N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide	Chevron 7/27/64	(Tech) m.p. 168-170°	U.A.R.	I.R.
027	Piperonyl butoxide	α-[2-(2-n-Butoxyethoxy)-ethoxy]-4,5-methylenedioxy-2-propyl toluene	Penick 7/27/64	80% of this compound 20% related compounds	U.A.R.	I.R.; G-C
028	*Piperonyl sulfoxide*	1,2-Methylenedioxy-2[2-octyl sulfinyl propyl]-benzene	Penick 7/27/64	Lot #115-MBO-2 88% this compound 12% related compounds	U.A.R.	I.R.; G-C
029	N-Propyl isome	Di-n-Propyl-3-methyl-6,7-methylenedioxy-1,2,3,4-tetrahydronaphthalene 1,2-dicarboxylate	Penick 7/27/64	b.p. 170-275° /1 *mm*	U.A.R.	I.R.; G-C
030	2,4-D Isopropyl ester	2,4-Dichlorophenoxy acetic acid, isopropyl ester	Dow 7/27/64	Lot #072442 99%	U.A.R.	I.R.; G-C
031	2,4-D Butyl ester	2,4-Dichlorophenoxy acetic acid, n-butyl ester	Dow 7/27/64	99%	U.A.R.	I.R.; G-C
032	2,4-D Isooctyl ester	2,4-Dichlorophenoxy acetic acid, isooctyl ester	Dow 7/27/64	97%	U.A.R.	I.R.; G-C
034	Urethane	Ethyl carbamate	Aldrich 7/27/64	m.p. 48.5-50°	Recrystallized to m.p. 50° C. before use	I.R.; G-C
047	Sevin	1-Naphthyl-N-methyl carbamate	Union Carbide 7/27/64	m.p. 138.5-141°	Recrystallized to m.p. 141-142° C. before use	I.R.; G-C
048	IPC	Isopropyl-N-phenyl carbamate	Pittsburgh Plate Glass 7/27/64	100% m.p. 90°	U.A.R.	I.R.; G-C
049	SDDC	Sodium diethyldithiocarbamate	M-C-B 7/29/64	m.p. 94-96°	U.A.R.	I.R.; TLC
050	Dowcide-7	2,3,4,5,6-Pentachlorophenol	Dow 7/29/64	Lot #9802 90% (m.p. 186-188°)	U.A.R.	I.R.; TLC; G-C

U.A.R. = Used as received; I.R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
051	Zineb	Zinc ethylene bis thiocarbamate	DuPont 7/29/64	97% Lot #T-90402-68	U. A. R.	I. R.; TLC; G-C
052	o,p'-DDD	2-(o-Chlorophenyl)-2-(p-chloro-phenyl)-1,1-dichloroethane	Aldrich 7/29/64	m. p. 77-78°	U. A. R.	I. R.; G-C
053	Diuron	3-(3,4-Dichlorophenyl)-1,1-dimethyl-urea	DuPont 7/29/64	m. p. 158-159°	U. A. R.	I. R.; G-C
054	Dodine	n-Dodecylguanidine acetate	American Cyanamid 7/29/64	m. p. 134-136°	U. A. R.	I. R.
056	Maneb	Manganese ethylene bis thiocar-bamate	DuPont 7/29/64	96% Lot #TMSSR 272	U. A. R.	I. R.; TLC
057	Maleic hydrazide	1,2-Dihydropyridazine-3,6-dione	U. S. Rubber 7/29/64	Lot #118 m. p. 297-300°	U. A. R.	I. R.; TLC
058	Thiram	Tetramethylthiuram disulfide or bis (dimethylthiocarbamyl) disulfide	E. K. 7/29/64	m. p. 154-156°	U. A. R.	I. R.; TLC
059	Monuron	3-(p-Chlorophenyl)-1,1-dimethyl urea	DuPont 7/29/64	95% Lot #80403-F	U. A. R.	I. R.; G-C
060	PCNB	Pentachloronitrobenzene	Baker 7/29/64	m. p. 144-146°	U. A. R.	I. R.; TLC
061	2,4,5-T	2,4,5-Trichlorophenoxy acetic acid	Diamond Alkali 7/29/64	98% Tech m. p. 149-151°	U. A. R.	I. R.; G-C
062	Ferbam	Ferric dimethyl dithiocarbamate	DuPont 7/29/64	97% Lot #5179-111	U. A. R.	I. R.; TLC
063	2,4-D	2,4-Dichlorophenoxy acetic acid	Aldrich 7/29/64	90% m. p. 136-140° Lot #5179-111	U. A. R.	I. R.; G-C
065	p,p'-DDT	2,2-Bis(p-chlorophenyl)-1,1,1-trichloroethane	Aldrich 7/29/64	m. p. 107.5-108.5°	U. A. R.	I. R.; G-C
066	Atrazine	2-Chloro-4-ethylamino-6-isopropyl-amino-s-triazine	Geigy 7/29/64	Lot #FL-2179ARS-1403A-64 98.2% m. p. 172-174°	U. A. R.	I. R.
067	p,p'-DDD	2-2-Bis(p-chlorophenyl)-1,1-dichloroethane	Aldrich 7/29/64	m. p. 108.5-109°	U. A. R.	I. R.; G-C
068	Ethyl tellurac	Tellurium diethyldithiocarbamate	R. T. Vanderbilt 7/29/64	m. p. 108-118°	U. A. R.	I. R.; TLC

U. A. R. = Used as received; I. R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
069	Captax	2-Mercaptobenzothiazole	R. T. Vanderbilt 7/29/64	m. p. 164-175°	U. A. R.	I. R. ; TLC
070	Ethyl zimate	Zinc-diethyldithiocarbamate	R. T. Vanderbilt 7/29/64	m. p. 171-182. 5°	U. A. R.	I. R. ; TLC
071	————	Phenyl isothiocyanate	E. K. 7/29/64	b. p. 99-100. 5/15mm	U. A. R.	I. R.
072	Perthane	1,1-Bis(p-ethylphenyl)-2,2-dichloroethane	Rohm & Haas 8/14/64	Lot #6895 95%; m. p. 38-40°	U. A. R.	I. R. ; G-C
073	Chloranil	Tetrachloro-p-benzoquinone	E. K. 8/14/64	m. p. 292-294°	U. A. R.	I. R.
074	Altax	Benzothiazyl disulfide	R. T. Vanderbilt 8/14/64	m. p. 159-170°	U. A. R.	I. R.
075	Unads	Tetramethyl thiuram monosulfide	R. T. Vanderbilt 8/14/64	m. p. 103-114°	U. A. R.	I. R. ; TLC
076	Dichlone	2,3-Dichloro-1,4-naphthoquinone	Naugatuck 8/14/64	(Tech) 95% m. p. 188-191°	U. A. R.	I. R.
077	Dicryl	3,4'-Dichloro-2-methyl acrylanilide	Niagara 8/14/64	Lot #5 m. p. 121-126°	U. A. R.	I. R.
078	————	Ethylene Imine	Dow 8/17/64	b. p. 55. 5-57° /760 mm	U. A. R.	I. R.
079	Nabam	Disodium ethylenebisdithiocarbamate	Rohm & Haas 8/20/64	Lot #3280 93%	U. A. R.	I. R. ; TLC; G-C
080	Agerite DPPD	Diphenyl-p-phenylenediamine	R. T. Vanderbilt 9/21/64	m. p. 145-152°	U. A. R.	I. R.
081	Vancide PB	1,2,3-Trichloro-4,6-dinitrobenzene	R. T. Vanderbilt 9/21/64	m. p. 86-88°	U. A. R.	I. R.

U. A. R. = Used as received; I. R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
082	Bismate	Bismuth dimethyldithiocarbamate	R. T. Vanderbilt 9/21/64	m.p. >228° (dec)	U. A. R.	I. R.; TLC
083	Redax	N-Nitrosodiphenylamine	R. T. Vanderbilt 9/21/64	m.p. 63-66°	U. A. R.	I. R.
084	————	2,3,4,6-Tetrachlorophenol	M-C-B 9/21/64	m.p. 57-60°	U. A. R.	I. R.; GLC; TLC
085	Hercules-7531	3-(Hexahydro-4,7-methano-indan-5-yl)-1,1-dimethylurea	Hercules 9/21/64	95% m.p. 165-168° Lot #AEY,165	U. A. R.	I. R.; G-C
086	Folpet	N-Trichloromethylthiophthalimide	Chevron 9/21/64	m.p. 173-176° 88%	U. A. R.	I. R.; TLC
087	Tillam-6-E	Propyl ethyl-n-butyl thiocarbamate	Stauffer 9/21/64	78% active component 22% inert components	U. A. R.	I. R.; G-C
088	Ledate	Lead Dimethyldithiocarbamate	R. T. Vanderbilt 9/21/64	m.p. >310° (dec)	U. A. R.	I. R.; TLC
089	Amitrol	3-Amino-1,2,4-triazole	E. K. 9/21/64	m.p. 146-152°	U. A. R.	I. R.
090	Zetax	Zinc salt of 2-mercaptobenzothiazole	R. T. Vanderbilt 9/21/64	m.p. >300°	U. A. R.	I. R.
091	Sulfads	Dipentamethylene thiuram hexasulfide	R. T. Vanderbilt 9/21/64	m.p. 115-120°	U. A. R.	I. R.
092	Butacide	Piperonyl butoxide in solvent vehicle	Fairchild 9/21/64		U. A. R.	G-C
093	Botran	2,6-Dichloro-4-nitroaniline	Upjohn 9/21/64	m.p. 192-194° Lot #2092M, BAC-093	U. A. R.	I. R.; TLC
094	Karathane	Dinitro(1-methylheptyl)-phenyl crotonate	City Chemical 9/21/64	78% b.p. 138-140°/0.05 mm	U. A. R.	
095	————	2-(2,4,5-Trichlorophenoxy)-propionic acid	M-C-B 9/21/64	m.p. 176-178°	U. A. R.	I. R.; G-C

U. A. R. = Used as received; I. R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
096	Mirex	Dodecachlorooctahydro-1,3,4-metheno-2H-cyclobuta[cd] pentalene	City Chemical 9/21/64	98% m.p. approx. 485°	U.A.R.	
097	Omal; dowicide 2S	2,4,6-Trichlorophenol	E.K. 9/21/64	m.p. 67-68°	U.A.R.	I.R.; G-C; TLC
098	Avadex	2,3-Dichloroallyl diisopropyl thiolcarbamate	Monsanto 9/21/64	b.p. 146-150°/9 mm	U.A.R.	I.R.; G-C
099	Cumate	Copper dimethyl dithiocarbamate	R.T. Vanderbilt 9/21/64	m.p. >325°	U.A.R.	I.R.; TLC
100	Mucochloric acid	α,β-Dichloro-β-formyl acrylic acid	Allied Chem 9/21/64	m.p. 125-127°	U.A.R.	I.R.
101	————	2-Sec.-butyl-4,6-dinitro phenol	M-C-B 9/21/64	95-98% m.p. 30-40°	U.A.R.	I.R.; G-C; TLC
102	Agerite Powder	Phenyl-β-naphthylamine	R.T. Vanderbilt 9/21/64		U.A.R.	I.R.
103	Rotenone	Tubatoxin	Aldrich 9/29/64	90% m.p. 178-183°	U.A.R.	
104	————	Biphenyl	Baker 10/1/64	m.p. 68-70°	U.A.R.	I.R.
105	Anthraquinone	9,10-Anthraquinone	E.K. 10/1/64	m.p. 286-288°	U.A.R.	I.R.
106	ANTU	1-(1-Naphthyl)-2-thiourea	E.K. 10/1/64	m.p. 176-180°	U.A.R.	I.R.
107	————	Diphenylacetonitrile	J.T. Baker 10/1/64	m.p. 73-74°	U.A.R.	I.R.
108	Planofix; NAA	1-Naphthalene acetic acid	J.T. Baker 10/1/64	m.p. 130-132°	U.A.R.	I.R.
109	————	Bis(2-Chloroethyl)-ether	J.T. Baker 10/1/64	b.p. 60-62°/11 mm	U.A.R.	I.R.
110	Azobenzene	Diphenyldimide	J.T. Baker 10/1/64	m.p. 67-68°	U.A.R.	I.R.

U.A.R. = Used as received; I.R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
111	Dehydroacetic acid	3-Acetyl-6-methyl-2,4-pyrandione	J. T. Baker 10/1/64	m.p. 109-111°	U.A.R.	I.R.
112	————	1-Naphthalene acetamide	J. T. Baker 10/1/64	m.p. 183-184°	U.A.R.	I.R.
113	————	Diphenylcarbonate	J. T. Baker 10/1/64	m.p. 79-81°	U.A.R.	I.R.
114	————	Monochloroacetic acid	Fisher 10/1/64	m.p. 62-64°	U.A.R.	I.R.
115	Cacodylic acid	Dimethyl arsinic acid	Fisher 10/1/64	m.p. 192-198°	U.A.R.	I.R.
116	Paraxenol	p-Phenyl phenol	E.K. 10/1/64	m.p. 166-167°	U.A.R.	I.R.; TLC
117	Dowicide 1; orthoxenol	o-Phenyl phenol	E.K. 10/1/64	m.p. 57-58°	U.A.R.	I.R.; TLC
118	————	Copper-8-hydroxy quinoline	K&K 10/1/64		U.A.R.	Colorimetric
119	α-Chloralose	Anhydroglucochloral	K&K 10/1/64	m.p. 184-187°	U.A.R.	
120	Pma; Pmal; Pmas; Tag HL-33; Scutl; nylmerate	Phenyl mercuric acetate	E.K. 10/1/64	m.p. 148-150°	U.A.R.	
121	————	p-Methoxyphenylacetic acid	MCB 10/1/64	m.p. 176-178°	U.A.R.	
122	Aramite	2-(p-Tert. butyl phenoxy)-isopropyl 2'-chloroethylsulfite	U.S. Rubber Naugatuck 10/1/64	90% b.p. 163-168°/0.1 mm	U.A.R.	I.R.
123	Vanguard GF	Ferric nitrosodimethyl dithiocarbamate and tetramethyl thiuram disulfide	R.T. Vanderbilt 10/1/64	58.5% main component 6.5% secondary component	U.A.R.	
124	Cyanamide	Calcium cyanamide	Fisher 10/19/64	(Tech)	U.A.R.	
125	Butyl zimate	Zinc dibutyl dithiocarbamate	R.T. Vanderbilt 10/19/64	[illegible] 194-198°	U.A.R.	I.R.; TLC

U.A.R. = Used as received; I.R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
126	Rotax	2-Mercaptobenzothiazole	R. T. Vanderbilt 10/19/64	m. p. 164-175°	U. A. R.	I. R.; TLC
127	Vancide BL	2,2-Thio bis(4,6-dichlorophenol)	R. T. Vanderbilt 10/19/64	97% active component 3% inert components	U. A. R.	I. R.; TLC
128	————	2,6-Dichloro-4-nitro aniline	E. K. 10/19/64	m. p. 195-196°	U. A. R.	I. R.; TLC
129	Ethyl Selenac	Selenium diethyl dithiocarbamate	R. T. Vanderbilt 10/19/64	m. p. 59-85°	U. A. R.	I. R.; TLC
130	Agerite white	Sym. dibeta-naphthyl-p-phenylene diamine	R. T. Vanderbilt 10/19/64	m. p. 224-230°	U. A. R.	I. R.
131	Durax	N-Cyclohexyl-2-benzothiazole sulfenamide	R. T. Vanderbilt 10/19/64	m. p. 94-102°	U. A. R.	I. R.
132	Methyl zimate	Zinc dimethyl dithiocarbamate	R. T. Vanderbilt 10/19/64	m. p. 242-257°	U. A. R.	I. R.; TLC
133	Methyl selenac	Selenium dimethyl dithiocarbamate	R. T. Vanderbilt 10/19/64	m. p. 140-172°	U. A. R.	I. R.; TLC
134	Ethyl tuads	Tetraethyl thiuram disulfide	R. T. Vanderbilt 10/19/64	m. p. 63-75°	U. A. R.	I. R.
135	Amax	N-oxydiethylenebenzothiazole-2-sulfenamide	R. T. Vanderbilt 10/19/64	m. p. 70-90°	U. A. R.	I. R.
136	Ethyl cadmate	Cadmium diethyl dithiocarbamate	R. T. Vanderbilt 10/19/64	m. p. 68-76°	U. A. R.	I. R.; TLC
137	Agerite 150	p-Isopropoxydiphenylamine	R. T. Vanderbilt 10/19/64		U. A. R.	I. R.

U. A. R. = Used as received; I. R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
138	Agerite alba	Hydroquinone monobenzyl ether	R. T. Vanderbilt 10/19/64	m. p. 108-115°	U. A. R.	I. R.
139	Phenothiazine	(Thiodiphenylamine) dibenzo-1, 4-thiazine	Fisher 10/19/64	m. p. 180-185°	U. A. R.	I. R.
140	Vanguard N	Nickel dibutyl dithiocarbamate	R. T. Vanderbilt 10/19/64	97%	U. A. R.	I. R.; TLC
141	Vancide BN	Sodium bithonolate disodium 2, 2'-thio bis(4, 6-dichlorophenoxide)	R. T. Vanderbilt 10/19/64	92%	U. A. R.	I. R.
142	Gibberellic acid	2, 4a, 7-Trihydroxy-1-methyl-8-methylenegibb-3-ene-1, 10-carboxylic acid 1 - 4 lactone	E. K. 10/19/64	80+% m. p. 229-231°	U. A. R.	I. R.
143	————	Dimethyl dithiocarbamic acid diethyl amm. salt	E. K. 10/27/64	m. p. 131-133°	U. A. R.	I. R.
144	Collunosol; Dowicide 2	2, 4, 5-Trichloro phenol	MCB 10/27/64	m. p. 57-63°	U. A. R.	I. R.; TLC
145	————	α-(2, 4-Dichlorophenoxy) propionic acid	Aldrich 10/27/64	m. p. 113-114°	U. A. R.	I. R.; G-C
146	————	α-(2, 5-dichlorophenoxy) propionic acid	Aldrich 10/27/64	m. p. 143-144. 5°	U. A. R.	I. R.; G-C
147	Ovex	p-Chlorophenyl-p-chlorobenzene sulfonate	City Chemical 10/27/64	94% m. p. 80-82°	U. A. R.	I. R.; TLC
148	————	Triphenyl tin acetate	MCB 10/27/64	m. p. 120-125° (Tech)	U. A. R.	
149	Zectran	4-Dimethylamino-3, 5-xylyl-methyl carbamate	City Chemical 10/27/64	95% Tech m. p. 82-84°	Recrystallized 84-85° before use	I. R.; G-C
150	CIPC	Isopropyl-N(3-chlorophenyl)-carbamate	Pittsburgh Plate 10/27/64	m. p. 38. 5-40° 98. 5%	U. A. R.	I. R.; G-C
151	2-(2, 4-DP)	2-(2, 4-Dichlorophenoxy)-propionic acid	Hercules 10/27/64	[illegible] SR-RC	U. A. R.	I. R.; G-C

U. A. R. = Used as received; I. R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

TABLE I (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON AND CHEMICAL NAME, SOURCE AND DATE RECEIVED, LABEL INFORMATION AND CONSTANTS, HOW USED AND ANALYTICAL TECHNIQUES EMPLOYED

BRL #	Common Name	Chemical Name	Source And Date Received	Label Information & Constants (T = °C)	How Used	Analytical Technique
152	Isolan	1-Isopropyl-3-methyl-5-pyrazolyl-dimethyl carbamate	Geigy 10/27/64	b.p. 105-107°/.30mm	U.A.R.	I.R.; G-C
153	ETU	Ethylene thiourea	J.T. Baker 10/29/64	m.p. 195-196°	U.A.R.	I.R.; TLC
154	———	N-(2-Hydroxyethyl) hydrazine	Aldrich 10/29/64	b.p. 218-220°/754mm	U.A.R.	I.R.; G-C
156	CCC	2-Chloroethyl trimethyl-ammonium chloride	E.K. 12/14/64	m.p. 239° (dec)	U.A.R.	I.R.; TLC
157	Ethylene urea	2-Imidazolidinone	J.T. Baker 12/14/64	m.p. > 128°	U.A.R.	I.R.; TLC
158	Tetrafidon	2,4,5,4'-Tetrachlorodiphenyl sulfone	City Chemical 12/14/64	99% m.p. 146-148°	U.A.R.	TLC
159	Telodrin	1,3,4,5,6,7,8,8-Octachloro-3a,4,7,7a-Hexahydro-4,7-methano phthalen	City Chemical 12/14/64	94% m.p. 120-125°	U.A.R.	
160	Dihydrosafrole	4-Propyl-1,2-methylenedioxybenzene	Baker 2/25/65		U.A.R.	I.R.; G-C; TLC
161	Isosafrole	4-Propenyl-1,2-methylenedioxy-benzene	Baker 2/25/65	b.p. 247-251°	U.A.R.	I.R.; G-C; TLC
162	Safrole	4-Allyl-1,2-methylenedioxybenzene	J.T. Baker 2/25/65	b.p. 232-234°	U.A.R.	I.R.; G-C; TLC
165	Genite-R99	2,4-Dichlorophenyl benzene sulfonate	City Chemical 4/13/65	99% Setting Pt. 43-45°	U.A.R.	I.R.
166	Heteroauxin	Indole-3-acetic acid	Aldrich 4/13/65	m.p. 166-168°	U.A.R.	I.R.
167	———	4-Dimethylamino-3,5-xylenol	Dow 4/13/65	m.p. 94-95°	U.A.R.	G-C; I.R.; TLC
168	Chlorobenzilate	Ethyl-4,4'-Dichlorobenzilate	City Chemical 4/13/65	99.3% m.p. 35-37°	U.A.R.	I.R.
169	Thiodan (Endosulfan)	6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexhydro-6,9-methano-2,3,4-benzo dioxathiepin-3-oxide	City Chemical 4/13/65	9[illegible]% mixt. of m.p. 108-110° & 208-210°	U.A.R.	I.R.; G-C
170	———	Bis(2-Hydroxyethyl) dithiocarbamic acid potassium salt	E.K. 4/13/65		U.A.R.	I.R.; TLC
171	Strobane	Terpene Polychlorinates	City Chemical 4/13/65	100% active polychlorinates	U.A.R.	

U.A.R. = Used as received; I.R. = Infra-red; G-C = gas chromatography; TLC = Thin-layer chromatography

Table II presents a somewhat arbitrary classification of the chemical compounds studied, generally by use, and in the same order as they are reported on in the Results Section of this Volume (corresponding table numbers are given) and in Volume II (Detailed Pathology Summary Sheets).

There are some inconsistencies in this classification. For example, in the Insecticide: Carbamate group, compound 167 (4-dimethylamino-3,5-xylenol) is included because it is a breakdown product of compound 149 (Zectran). Compound 168 (Chlorobenzilate), under Insecticides: DDT type, is also used as an acaricide. Compound 110 (azobenzene), under Herbicides: Growth Regulators, is also a metabolite. Similarly, compound 105 (anthraquinone) is listed under Fungicides: Quinones but it is also used as a bird repellant. Many other examples can be found. A supplement to this report is in progress which will give more detailed information on each of the compounds studied including structure, use, and tolerance where they have been established.

Analytical methodology had to be developed for the detection and identification of many of the pesticidal compounds. These methods are described by reference to pertinent published papers emanating from this contract:

Carbamates and related derivatives (5-19)

Maleic Hydrazide and derivatives (20-22)

Aziridines (23-24)

Methylenedioxyphenyl derivatives (25-26)

Isomeric chlorophenols and derivatives (27-29)

Miscellaneous pesticides and derivatives (30-36)

In addition, ancillary methodologies are described by reference as follows:

Stability with respect to environmental factors such as heat and ultraviolet light, and metabolic fate of a selected number of pesticides, e.g., methylenedioxyphenyl synergists. (37-43)

Development and/or refinements of apparatus and techniques to aid in the elaboration and analysis of pesticidal agents. (44-45)

TABLE II

CHEMICAL COMPOUNDS STUDIED, CLASSIFIED GENERALLY BY USE

CLASSIFICATION	COMPOUND NUMBERS	TABLE NUMBER*
Chemical Compounds Used as Positive Controls	034, 089, 078, 122, 160, 161, 162	XV
Insecticides: Carbamates	152, 149, 167, 150, 048, 047	XVII
Insecticides: DDT Type	065, 067, 052, 072, 168	XVIII
Insecticides: Other Chlorinated Hydrocarbons	171, 169, 096, 159	XIX
Insecticides: Synergists	027, 092, 028, 029	XX
Insecticides: Various Structures	109, 103, 139	XXI
Herbicides: S-Triazines	066, 025, 024	XXII
Herbicides: Urea Derivatives	085, 053, 059, 157	XXIII
Herbicides: Growth Regulators	057, 154, 110, 077, 112, 108, 166	XXIV
Herbicides: Growth Regulators 2,4-D Type	063, 030, 031, 032, 146, 151, 145, 061, 095	XXV
Herbicides And Other Agricultural Chemicals	142, 114, 156, 124, 120, 115	XXVI
Fungicides/Acaricides: Chlorinated Phenols	050, 084, 097, 144, 141, 127, 158, 147, 165	XXVII
Fungicides: Nitrobenzene Derivatives	094, 101, 093, 128, 081, 060	XXVIII
Fungicides: Quinones	073, 076, 105	XXIX
Fungicides: Thiophthalimides	086, 026	XXX
Fungicides: Dithiocarbamate Compounds	079, 049, 170, 123, 062, 140, 068, 099, 136, 088, 133, 129, 082, 125, 070, 132, 051, 056, 143, 091, 134, 058, 075, 098, 087, 153	XXXI

*TABLE NUMBER Refers to Pathology Summary Tables in RESULTS SECTION.

TABLE II (Continued)

CHEMICAL COMPOUNDS STUDIED, CLASSIFIED GENERALLY BY USE

CLASSIFICATION	COMPOUND NUMBERS	TABLE NUMBER*
Fungicides: Various Structures	054, 111, 118, 100	XXXII
Rodenticides: Various Structures	148, 106, 119	XXXIII
Industrial Chemicals Used in Rubber Industry: Accelerators	135, 131, 090, 074, 126, 069, 071	XXXIV
Industrial Chemicals Used in Rubber Industry: Antioxidants	130, 080, 137, 102, 104, 138, 116, 117	XXXV
Other Industrial Chemicals And Intermediates of Interest	107, 113, 083, 121	XXXVI

*TABLE NUMBER Refers to Pathology Summary Tables in RESULTS SECTION.

Strains of Mice Used

Two strains of hybrid mice were used in the definitive studies of carcinogenesis. Both were F1 hybrids from crosses of inbred strains maintained in specific pathogen free colonies at Cumberland View Farms, Clinton, Tennessee. Hybrids designated B6C3[46] are the product of mating C57BL/6 females with C3H/Anf males while those designated B6AK derive from C57BL/6 females mated with AKR males. The C3H strain has one of the highest known incidences of mammary tumors in females and liver tumors in males. The incidence of mammary tumors is particularly high in breeding females and only slightly lower in virgin females. The AKR strain is known to have a high incidence of leukemia by 6-8 months of age and has been widely used in cancer research, but rarely elsewhere. The C57BL/6 strain is widely used and known for its low incidence of leukemia and long life span.

These particular hybrids were chosen in expectation of a high susceptibility to carcinogenic stimuli coupled with the hardiness and longevity characteristic of F1 hybrids. There were no previous data on the incidence of neoplastic or other diseases in these two hybrids. Thus, our data have value above and beyond the reported carcinogenic findings.

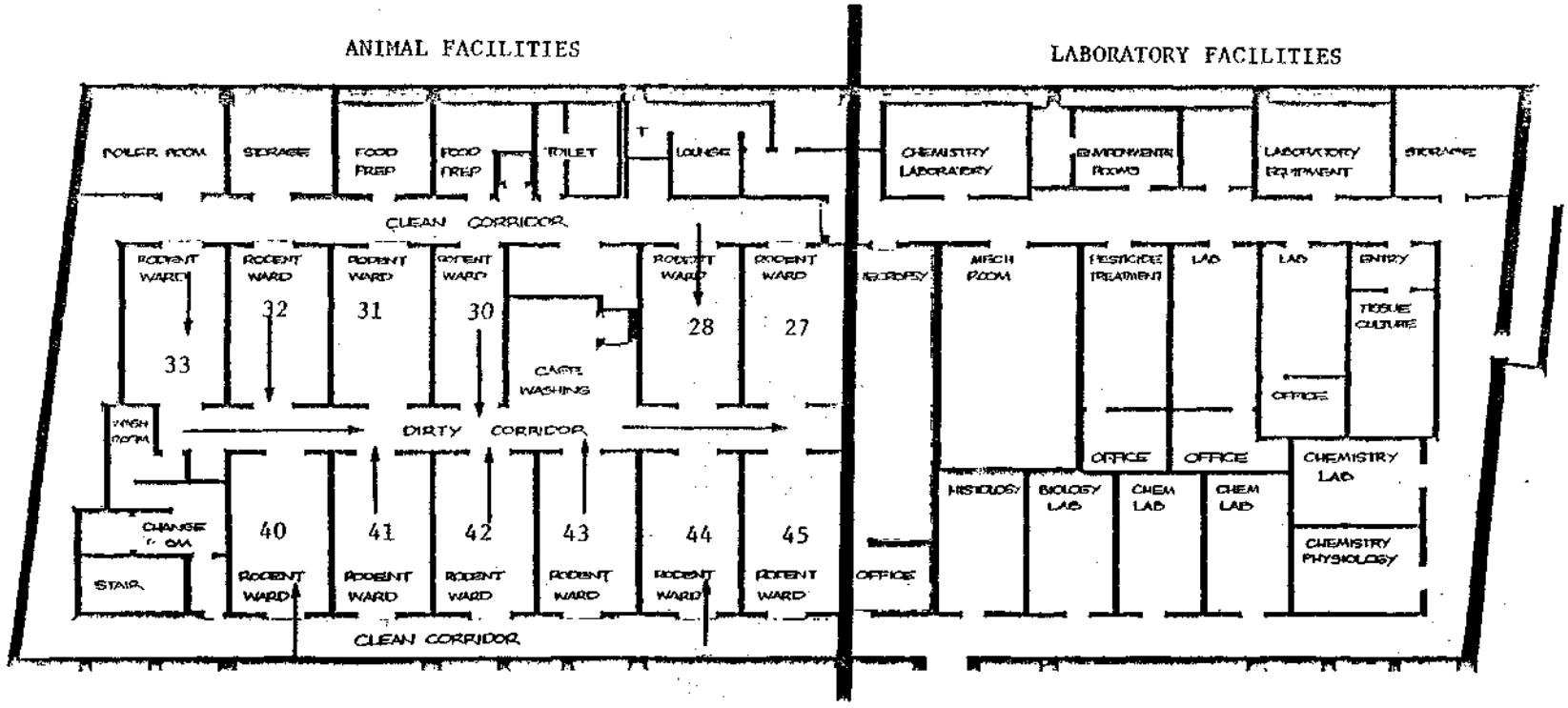
Husbandry and Facilities

All mice used in this study were obtained from a specific pathogen free (SPF) colony originally established from caesarian hysterectomy delivered animals. The mice were shipped in filter protected boxes and barrier-sustained after they were received into our laboratory. Experimental mice given subcutaneous injection of compounds, were received as weanlings. To initiate the study, some pregnant breeders were bought to provide the seven day old mice used for oral administration of compounds. An in-house breeding colony of the three parent strains was established and thereafter the experimental mice for oral studies were bred from this colony.

Facilities were designed specifically for this program; the floor plan is illustrated in the following diagram (Figure 1). The animal facilities are sealed off from the laboratory facilities.

The plan incorporates a segragated clean-dirty corridor system for the

FIGURE 1



FLOOR PLAN

LABORATORIES DEVOTED TO THE
PROGRAM OF CARCINOGENESIS STUDIES

BIONETICS RESEARCH LABORATORIES, INC.
101 WEST JEFFERSON ST., FALLS CHURCH, VA.

animal housing area. Although this feature means, of necessity, reduction in usable space, it is justified because it minimizes cross-contamination between discrete animal colony units. The dual corridor system additionally permits efficient unidirectional flow of work and accommodates a high degree of centralization in service features of the facility. It results in controlled access to animal areas and minimization of possible unintentional contamination. It is also desireable to enhance efficiency through concentration of like activities and functions. A dual duct high velocity system was used for heating, ventilation and air conditioning. Unidirectional air-flow minimized room to room contamination with absolute filtration of all incoming air to remove particulate matter of 0.3 micron diameter or greater. All animal attendants wore a standard "sterile" dress over outer clothing and also cap, face mask, gloves and shoe covering. A shoe bath of disinfectant was located at the entrance to the clean areas.

Rooms 28, 31-33 and 40-43 were used for the carcinogenic study. Rooms 27, 44 and 45 were used for the breeding colony and miscellaneous studies such as the metabolic studies. Room 30 was a general purpose supply and protocol-keeping room.

The layout of various animal areas is a space module of approximately 24' x 24'. These are divided further along one axis to give a submodular unit of approximately 12' x 24'. As a generalization, this submodule is of optimal size for mouse holding functions in that it permits a reasonable number of animals to be housed per unit. Each rodent room contained 5 racks, with 72 cages to a rack. With a maximum of 6 mice to a cage, 2160 mice could be housed in each room. They were given food and water <u>ad libitum.</u> Cages were cleaned and repositioned on the same rack once weekly. Rack positions within the room were changed once each month. Animals were observed daily for any abnormalities and palpated weekly at time of weighing for enlargement of liver and spleen, or any subcutaneous tumor. Animals which appeared moribund were killed for necropsy. The six animals in each cage were weighed once a week and body weight curves kept.

Staff

The staff necessary to support the animal studies were as follows:

- Eight animal aides (one per room), duties included the usual husbandry functions and recording of death.
- One animal aide, assigned to each of the clean and dirty corridors, duties included delivery of supplies to each of the rooms and removal of waste.
- One technician, assigned to the feed mixing room.
- One "floating' laboratory aide to assist heavy work load areas.
- One secretary and one technician assigned to record keeping and calculation.
- One senior technical supervisor to oversee the entire operation.

Diet

The baked diet for all control and experimental mice was the same (with the exception of experimental compounds) and was produced by D & G Co., Frederick, Maryland. Routine tests to determine absence of Coliform, Salmonella and Pseudomonas spp. were made at regular intervals. Table III lists the nutrients and ingredients of the diet.

TABLE III

NUTRIENTS AND INGREDIENTS OF THE DIET

NUTRIENTS

Crude Protein, Min.	24.0%	Vitamin A	5050	USP Units/lb
Crude Fat, Min.	5.0%	Vitamin D	2996	USP Units/lb
Crude Fiber, Max.	4.5%	Vitamin E	45	IU/lb
Ash, Max.	10.0%	Riboflavin	2.4	mg/lb
Carbohydrate	50.9%	Niacin	18.0	mg/lb
Calcium	0.8%	Pantothenic Acid	8.1	mg/lb
Phosphorus	0.8%	Thiamine	3.0	mg/lb
Arginine	1.3%	Choline	671.0	mg/lb
Lysine	1.4%	Productive Energy	772.0	Cal./lb
Methionine	0.6%	N Free Extract	48.7%	
Cystine	0.3%	Iron	0.004%	
Tryptophane	0.3%	Manganese	3.7	mg/lb
Glycine	1.7%	Copper	2.6	mg/lb
		Cobalt	0.017	mg/lb

INGREDIENTS

Powdered Milk	Fish Meal
Brewer's Yeast	Salt
Soybean Oil Meal	Defluorinated Phosphate
Ground Yellow Corn	Animal Fat
Alfalfa Meal	Dry A & D Supplement
Wheat Bran	Ammonium Bicarbonate
Clear Wheat Flour	Water

Method of Study

Two types of long term studies (approximately 18 months) were carried out on the compounds:

(1) A single subcutaneous injection was given in the nape of the neck to weanling mice on approximately the 28th day of age.

(2) Continuous daily oral administration by stomach tube was begun on the 7th day of age until the mice were at weanling age (28 days) following which the compound was mixed with the ground feed.

The number of animals used per sex per strain was according to the following scheme:

	B6C3F1 Strain A		B6AKF1 Strain B	
	Male	Female	Male	Female
Oral	18	18	18	18
Subcutaneous	18	18	18	18

The 18 month duration of the study was chosen for several reasons. We were not aware of the lifespan of the hybrid strain when the study was initiated and hence were hesitant to extend the study to 24 or more months. We now feel confident that these mice would survive for such a period. The 18 months did provide optimum conditions for carcinogenic studies, i.e., maximum exposure and/or observation time with a minimum morbidity and/or mortality due to old age.

The reason for the choice of mixing the chemicals in the diet should be obvious. The potential hazard for man associated with the vast majority of the chemicals studied is by the oral route and, in many cases, admixed with food. An additional advantage is the simplicity of the tecnique. The single subcutaneous administration was chosen to assist in disclosing "strong" carcinogens. It has long been known that single exposures to these compounds early in life will result in significant tumor incidence over controls. Indeed,as will be seen later in the report, several of the positive control compounds were easily identified by this technique.

Compound Preparation

In general, the compounds for the oral study were suspended in 0.5% gelatin. In the subcutaneous studies, if they were insoluble in distilled water, an attempt was made to dissolve them in DMSO or corn oil. If this procedure failed, the compounds were suspended in 0.5% gelatin.

The concentration of the final solution or suspension was such that the intended dose for a single animal was contained in 0.05 ml of the preparation. Dosing of individual mice was based on the average weight within a single group and, in the case of repetitive administration, was based on starting weights and not adjusted as the study continued. An exception to this was the recalculation in the definitive study, at the time of weaning when administration was converted from daily stomach tubing to incorporation in the diet.

In the absence of advance information indicating potential decomposition of the compound in solution, a quantity of solution adequate for the particular preliminary study (i.e., one, six or nineteen doses) was prepared as a single batch. This was stored under refrigeration and protected from exposure to light. In the definitive studies, batches of pesticide-containing diet were prepared in quantities estimated to be adequate for four weeks with allowance for removal of samples for analytical monitoring. These were stored under refrigeration and protected from light when not in actual use. These general statements were applicable to most experimental compounds.

Dosage Level Determination

The basic concept of the dosage choice was the use of a maximum tolerated dose in both the single subcutaneous and the continuous oral administration studies. The maximum tolerated dose was given since these experiments were designed as screening procedures to detect any possible carcinogenicity. No attempt was made to determine the response to chronic administration of lower doses. In the case of the oral administration study, the calculated dose was not adjusted to the changing body weight during the three weeks of stomach tubing but a single adjustment was made at the time of conversion from stomach

tube to mixture in the feed.

The following preliminary toxicity studies were conducted on all compounds prior to initiation of the carcinogenic bioassay studies. These toxicity studies were carried out on random-bred mice beginning at seven to eight days of age for oral studies or at weaning for subcutaneous studies. All dosages used were selected from a list made up of the values 1.0, 2.15, and 4.64 multiplied by appropriate powers of 10. However, no doses above 1,000 mg/kg were studied with the exception of compound no. 029 which was studied at 2,000 mg/kg and compound no. 034 which was studied at a total dose of 3.0 mg/mouse (158 mg/kg).

Phase I - Single Dose

Toxicity of single doses was determined by both oral and subcutaneous administration using groups of four animals per dose for each route. Initial range finding was accomplished by using doses differing by factors of 10. After 24 hours of observation, intermediate doses were given to additional groups of animals. From these data the maximum tolerated dose (defined as the largest dose which produced zero mortality), and the next higher and the next lower doses in the series, were identified. The maximum tolerated dose for subcutaneous administration, was identified in this phase of the study, was the dose to be used for single subcutaneous administration to weanling hybrids.

Phase II - Six Dose

This phase was carried out by means of oral administration only and consisted of giving the MTD identified in Phase I, as well as the next higher and next lower doses, to groups of six animals every other day, for a total of six doses. As this study proceeded, indications of a need for higher or lower doses were available and new groups of animals using these additional doses were started as soon as indicated. From the accumulated data, a maximum tolerated dose (defined as above) for the six dose study was identified.

Phase III - Nineteen Dose

This phase of the study was carried out by oral administration and only utilizing groups of six animals each. The maximum tolerated dose identified in Phase II plus the next higher and lower doses were

administered daily for a total of nineteen doses. As in Phase II, new groups of animals, using higher or lower doses, were introduced into the study as indicated. At the end of Phase III, a maximum tolerated dose (still defined as above) was identified and this dose was then used to start hybrid animals for the definitive studies.

During the preliminary toxicity studies all cages were checked daily and animals weighed weekly. Weights were taken by groups rather than by individuals. Individual mice were not identified until such time as there was a specific reason for this, such as death. Moribund animals were killed and subjected to a gross autopsy. All surviving animals were held for at least 7 days following compound administration, then killed and subjected to a complete gross and/or microscopic examination.

Feed Mixing

Feed-pesticide mixing was done in two Patterson-Kelly Twin Shell Liqui Solids Blenders. A supply of feed, enough for all animals on a particular pesticide for a month, was prepared at one time and divided into four equal portions. The first portion was dispensed into self-feeders and given to the animals. The remaining three portions were packaged separately in waxed paper bags, which were in turn sealed in polyethylene bags and refrigerated. Each portion consisted of a week's supply for a given dose level of compound, plus a small excess in case of emergency. This reduced the handling of mixed feed-pesticide to a minimum. Studies with fluorescein as an indicator, both in the dry state and as a solution, showed that a fifteen minute mixing period in the twin shell blender was highly satisfactory for the uniform incorporation of pesticide with feed. Gas chromatographic analyses and other appropriate analytic techniques were used to show that the compound had been homogeneously dispersed throughout the feed.

Initial Dosage Levels Used

Table IV presents all the dosage levels used in this study. In addition, the table presents the vehicle used. It should be kept in mind that the vehicle used in the oral study was the solvent or suspending agent for stomach tubing only, i.e., day 7 to 28. Thereafter,from weanling age to 18 months, the agent was simply mixed in the diet as previously described.

The average starting body weight of each group at the time of dietary feeding of the compounds varied from to 10 to 19 grams. No adjustment was made for body weight gain during the study. The average body weight at the start of the experiment was used to calculate the amount of compound administered. For example if the average body weight of the mice was 15 gms. and assuming average daily food consumption was 5 gm. and the dosage level to be administered was 100 mg/kg, then 1.95 gms of material was mixed with 6.5'kg of feed. This mixture was then refrigerated and dispensed as scheduled. Therefore, although the dose level indicated in Table IV was correct early in the study, adjustment would be necessary to correct for body weight gain to calculate mg/kg received later in the study. Table V presents these body weight changes. The average body weight at the start, 6 months, 12 months and termination are presented (figures in parenthesis indicate age in weeks at sacrifice).

Clearly, each animal will consume slightly different amounts of the diet in any small, given interval of time and the distribution of food (and test compound) so consumed will follow some form of normal distribution curve. It should also be clear that, as with any stochastic process, the statistical variation in food consumed will be coupled with the statistical variation in response to administered compounds to yield one grand, essentially Gaussian response.

TABLE IV

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON OR CHEMICAL NAME, DOSAGE AND VEHICLE OR SOLVENT

Code No.	Common or Chemical Name	Subcutaneous Dosage mg/kg	Subcutaneous Solvent	Oral Dosage mg/kg	Oral Vehicle*	ppm
024	Simazine	1000	0.5% gelatin	215	0.5% gelatin	603
025	Propazine	1000	0.5% gelatin	46.4	0.5% gelatin	102
026	Captan	1000	0.5% gelatin	215	0.5% gelatin	560
027	Piperonyl Butoxide	100	Corn oil	100	0.5% gelatin	300
028	Piperonyl Sulfoxide	46.4	Corn oil	46.4	0.5% gelatin	111
029	N-Propyl Isome	1000	DMSO	2000	0.5% gelatin	6000
030	2,4-D Isopropyl Ester	100	Corn oil	46.4	0.5% gelatin	111
031	2,4-D Butyl Ester	21.5	Corn oil	46.4	0.5% gelatin	149
032	2,4-D Isooctyl Ester	21.5	Corn oil	46.4	0.5% gelatin	130
034	Ethyl Carbamate	25	DMSO	158	0.5% gelatin	600
047	Sevin	100	DMSO	4.64	0.5% gelatin	14
048	IPC	215	DMSO	215	0.5% gelatin	560
049	SDDC	464	Dis. H_2O	215	Dis. H_2O	692
050	Dowcide-7	46.4	Corn oil	46.4	0.5% gelatin	130
051	Zineb	1000	0.5% gelatin	464	0.5% gelatin	1298
052	o,p'-DDD	464	DMSO	215	0.5% gelatin	560
053	Diuron	1000	0.5% gelatin	464	0.5% gelatin	1400
054	Dodine	1000	0.5% gelatin	21.5	0.5% gelatin	82
056	Maneb	100	0.5% gelatin	46.4	0.5% gelatin	158
057	Maleic Hydrazide	1000	0.5% gelatin	1000	0.5% gelatin	3000
058	Thiram	46.4	0.5% gelatin	10	0.5% gelatin	26
059	Monuron	100	0.5% gelatin	215	0.5% gelatin	517
060	PCNB	1000	0.5% gelatin	464	0.5% gelatin	1206
061	2,4,5-T	215	DMSO	21.5	0.5% gelatin	60
062	Ferbam	100	0.5% gelatin	10	0.5% gelatin	32
063	2,4-D	464	DMSO	100	0.5% gelatin	323
	2.4-D	215	DMSO	46.4	0.5% gelatin	149
065	p,p'-DDT	464	0.5% gelatin	46.4	0.5% gelatin	140
066	Atrazine	100	0.5% gelatin	21.5	0.5% gelatin	82
067	p,p—DDD	464	Corn oil	100	0.5% gelatin	300
068	Ethyl Tellurac	1000	0.5% gelatin	46.4	0.5% gelatin	149
069	Captax	215	0.5% gelatin	100	0.5% gelatin	323
070	Ethyl Zimate	464	0.5% gelatin	100	0.5% gelatin	260
071	Phenyl Isothiocyanate	100	Corn oil	46.4	0.5% gelatin	158
072	Perthane	215	DMSO	215	0.5% gelatin	815
073	Chloranil	464	0.5% gelatin	215	0.5% gelatin	646
074	Altax	1000	0.5% gelatin	464	0.5% gelatin	1577
075	Unads	100	DMSO	100	0.5% gelatin	377
076	Dichlone	21.5	0.5% gelatin	10	0.5% gelatin	30
077	Dicryl	1000	DMSO	21.5	0.5% gelatin	73
078	Ethylene imine	4.64	Dis. H_2O	4.64	0.5% gelatin	13
079	Nabam	10	Dis. H_2O	21.5	Dis. H_2O	73
080	Agerite DPPD	1000	DMSO	1000	DMSO	3385
081	Vancide PB	10	DMSO	46.4	DMSO	121
082	Bismate	1000	0.5% gelatin	10	0.5% gelatin	34

*Used during stomach tubing period only.

TABLE IV (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON OR CHEMICAL NAME, DOSAGE AND VEHICLE OR SOLVENT

Code No.	Common or Chemical Name	Subcutaneous Dosage mg/kg	Subcutaneous Solvent	Oral Dosage mg/kg	Oral Vehicle*	ppm
083	Redax	1000	DMSO	1000	DMSO	3769
084	Tetrachlorophenol	100	DMSO	----	----	----
085	Hercules-7531	1000	0.5% gelatin	464	0.5% gelatin	1492
086	Folpet	1000	0.5% gelatin	215	0.5% gelatin	603
087	Tillam-6-E	10	Corn oil	100	Corn oil	323
088	Ledate	1000	0.5% gelatin	46.4	0.5% gelatin	130
089	Amitrol	1000	Dis. H_2O	1000	Dis. H_2O	2192
090	Zetax	1000	0.5% gelatin	1000	0.5% gelatin	3385
091	Sulfads	1000	0.5% gelatin	100	0.5% gelatin	300
092	Butacide	1000	Corn oil	464	0.5% gelatin	1112
093	Botran	1000	DMSO	215	0.5% gelatin	603
094	Karathane	10	Corn oil	1.0	0.5% gelatin	3
095	Trichlorophenoxy P.A.	215	DMSO	46.4	0.5% gelatin	121
096	Mirex	1000	0.5% gelatin	10	0.5% gelatin	26
097	2,4,6-Trichlorophenol	464	Corn oil	100	0.5% gelatin	260
098	Avadex	1000	Corn oil	215	0.5% gelatin	560
099	Cumate	100	0.5% gelatin	46.4	0.5% gelatin	168
100	Mucochloric Acid	21.5	DMSO	21.5	0.5% gelatin	36
101	Butyl-Dinitro Phenol	21.5	Corn oil	2.15	0.5% gelatin	7
102	Agerite Powder	464	DMSO	464	0.5% gelatin	1206
103	Rotenone	100	0.5% gelatin	1.0	0.5% gelatin	3
104	Biphenyl	46.4	DMSO	215	0.5% gelatin	517
105	Anthraquinone	1000	0.5% gelatin	464	0.5% gelatin	1206
106	Antu	4.64	DMSO	2.15	0.5% gelatin	6
107	Diphenylacetonitrile	464	DMSO	215	0.5% gelatin	560
108	1-Naphthalene	100	DMSO	215	0.5% gelatin	517
109	Bis(2-Chloroethyl)-Ether	215	Dis. H_2O	----	----	----
	Bis(2-Chloroethyl)-Ether	215	Dis. H_2O	100	Dis. H_2O	300
110	Azobenzene	1000	DMSO	21.5	0.5% gelatin	56
111	Dehydro Acetic Acid	46.4	DMSO	100	0.5% gelatin	240
112	Naphthalene Acetamide	46.4	DMSO	464	0.5% gelatin	1298
113	Diphenylcarbonate	1000	DMSO	100	0.5% gelatin	260
114	Monochloroacetic Acid	100	Dis. H_2O	46.4	Dis. H_2O	149
115	Cacodylic Acid	464	Dis. H_2O	46.4	Dis. H_2O	121
116	p-Phenylphenol	1000	DMSO	464	0.5% gelatin	1290
117	o-Phenylphenol	1000	Corn oil	100	0.5% gelatin	280
118	Cu Hydroxy Quinoline	1000	0.5% gelatin	1000	0.5% gelatin	2800
119	a-Chloralose	215	DMSO	10	0.5% gelatin	28
120	Phenyl Mercuric Acetate	46.4	DMSO	10	0.5% gelatin	24
121	p-Methoxyphenylacetic Acid	1000	DMSO	215	0.5% gelatin	560
122	Aramite	1000	Corn oil	464	0.5% gelatin	1112
123	Vanguard GF	46.4	0.5% gelatin	100	0.5% gelatin	240
124	Calcium Cyanamide	100	0.5% gelatin	100	0.5% gelatin	240

*Used during stomach tubing period only.

TABLE IV (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON OR CHEMICAL NAME, DOSAGE AND VEHICLE OR SOLVENT

Code No.	Common or Chemical Name	Subcutaneous Dosage mg/kg	Subcutaneous Solvent	Oral Dosage mg/kg	Oral Vehicle*	Oral ppm
125	Butyl Zimate	1000	0.5% gelatin	1000	0.5% gelatin	2600
126	Rotax	1000	DMSO	----	----	----
127	Vancide BL	1000	DMSO	46.4	0.5% gelatin	111
128	Dichloro Nitroaniline	1000	0.5% gelatin	215	0.5% gelatin	731
129	Ethyl Selenac	464	0.5% gelatin	10	0.5% gelatin	26
130	Agerite White	1000	0.5% gelatin	100	0.5% gelatin	280
131	Durax	1000	0.5% gelatin	215	0.5% gelatin	692
132	Methyl Zimate	46.4	0.5% gelatin	4.6	0.5% gelatin	15
133	Methyl Selenac	464	0.5% gelatin	10	0.5% gelatin	34
134	Ethyl Tuads	1000	0.5% gelatin	100	0.5% gelatin	323
135	Amax	464	0.5% gelatin	464	0.5% gelatin	1492
136	Ethyl Cadmate	1000	0.5% gelatin	21.5	0.5% gelatin	65
137	Agerite 150	1000	0.5% gelatin	1000	0.5% gelatin	3000
138	Agerite Alba	1000	0.5% gelatin	464	0.5% gelatin	1492
139	Phenothiazine	1000	0.5% gelatin	215	0.5% gelatin	560
140	Vanguard N	----	----	46.4	0.5% gelatin	158
	Vanguard N	1000	0.5% gelatin	0.1	0.5% gelatin	.20
141	Vancide BN	10	Corn oil	2.15	0.5% gelatin	7
142	Gibberellic Acid	1000	DMSO	464	0.5% gelatin	1298
143	Dimethyldithiocarbamic A.	464	Dis. H_2O	100	0.5% gelatin	260
144	2,4,5-Trichlorophenol	1000	Corn oil	----	----	----
145	Dichlorophenoxy P.A.	100	DMSO	100	0.5% gelatin	260
146	Dichlorophenoxy P.A.	100	DMSO	46.4	0.5% gelatin	93
147	Ovex	1000	DMSO	464	0.5% gelatin	1019
148	Triphenyl Tin Acetate	464	0.5% gelatin	.464	0.5% gelatin	1206
149	Zectran	10	DMSO	4.64	0.5% gelatin	11
150	CIPC	1000	DMSO	464	0.5% gelatin	1112
151	2-(2,4-DP)	464	0.5% gelatin	10	0.5% gelatin	28
152	Isolan	.0215	Dis. H_2O	.0215	Dis. H_2O	.0603
153	ETU	1000	DMSO	215	0.5% gelatin	646
154	Hydroxyethyl-Hydrazine	21.5	Dis. H_2O	2.15	Dis. H_2O	5
156	CCC	46.4	Dis. H_2O	21.5	0.5% gelatin	65
157	Ethylene Urea	1000	0.5% gelatin	215	0.5% gelatin	646
158	Tetrafidon	1000	0.5% gelatin	100	0.5% gelatin	260
159	Telodrin	4.6	DMSO	0.215	0.5% gelatin	.646
160	Dihydrosafrole	1000	DMSO	464	Dis. H_2O	1400
161	Isosafrole	1000	DMSO	215	Dis. H_2O	517
162	Safrole	1000	DMSO	464	Dis. H_2O	1112
165	Genite-R99	1000	DMSO	1000	0.5% gelatin	2400
166	Indole-3-Acetic Acid	1000	DMSO	215	0.5% gelatin	646
167	Dimethylamino Xylenol	1000	DMSO	100	0.5% gelatin	300

*Used during stomach tubing period only.

TABLE IV (Continued)

LIST OF CHEMICAL COMPOUNDS STUDIED WITH CODE NUMBER, COMMON OR CHEMICAL NAME, DOSAGE AND VEHICLE OR SOLVENT

Code No.	Common or Chemical Name	Subcutaneous Dosage mg/kg	Subcutaneous Solvent	Oral Dosage mg/kg	Oral Vehicle*	Oral ppm
168	Chlorobenzilate	1000	DMSO	215	0.5% gelatin	603
169	Thiodan	----	----	2.15	0.5% gelatin	6
	Thiodan	2.15	DMSO	1.0	0.5% gelatin	3
170	Hydroxyethyl - Dithiocarbamic Acid	464	DMSO	464	0.5% gelatin	1112
171	Strobane	1000	DMSO	4.64	0.5% gelatin	11

*Used during stomach tubing period only.

TABLE V

BODY WEIGHT CHANGES DURING ORAL ADMINISTRATION

TIME: (weeks)	START (4)				26				52				TERM (weeks)			
STRAIN:	B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)	
SEX:	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
COMPD #																
024	14	14	14	14	34	28	37	30	38	30	38	33	40(77)	34(77)	40(77)	35(77)
025	11	11	11	11	37	34	37	30	39	40	45	35	40(86)	41(86)	46(93)	39(95)
026	13	13	13	13	36	33	41	37	34	45	51	33	43(82)	46(82)	52(82)	52(82)
027	15	15	15	15	35	33	40	32	38	38	37	35	38(83)	44(83)	41(83)	42(83)
028	12	12	12	12	34	31	41	33	34	36	44	39	40(71)	41(72)	50(83)	44(84)
029	15	15	15	15	33	30	38	30	36	34	39	33	48(77)	41(77)	46(77)	38(77)
030	12	12	12	12	39	32	39	37	45	37	42	37	42(77)	44(81)	42(83)	42(83)
031	16	16	16	16	36	29	38	35	41	37	41	42	42(84)	41(84)	45(87)	46(86)
032	14	14	14	14	39	33	39	32	42	44	43	38	43(84)	46(84)	42(86)	42(81)
034	19	19	19	19	33	42	30	37	33	35	42	43	33(71)	35(69)	37(73)	43(74)
047	15	15	15	15	38	31	39	33	43	40	44	42	42(80)	43(80)	44(79)	46(79)
048	13	13	13	13	34	32	39	32	42	41	45	43	46(73)	44(73)	47(82)	46(81)
049	16	16	16	16	36	32	38	34	43	40	46	44	43(78)	46(78)	46(78)	46(78)
050	14	14	14	14	34	32	38	31	38	41	44	41	40(75)	44(63)	45(78)	43(77)
051	14	14	14	14	36	28	38	32	43	34	45	38	43(86)	39(86)	43(90)	43(90)
052	13	13	13	13	34	30	37	33	41	41	44	42	41(77)	44(77)	45(77)	45(77)
053	15	15	15	15	36	29	37	30	39	32	38	34	41(78)	34(78)	42(78)	35(78)
054	19	19	19	19	39	36	45	37	41	46	50	44	42(85)	50(86)	51(87)	51(87)
056	17	17	17	17	35	30	42	32	38	36	47	37	40(80)	43(80)	48(84)	43(86)
057	15	15	15	15	37	30	40	42	42	37	46	38	44(81)	40(81)	44(84)	45(84)
058	13	13	13	13	39	34	45	34	42	41	46	41	46(79)	43(79)	49(81)	45(82)
059	12	12	12	12	35	34	40	33	37	37	40	38	40(78)	41(77)	48(76)	42(77)
060	13	13	13	13	33	28	35	29	37	35	39	33	38(78)	38(78)	39(78)	38(78)
061	14	14	14	14	42	33	38	33	45	39	41	39	48(81)	42(84)	43(84)	47(84)
062	16	16	16	16	41	34	42	36	45	41	44	43	44(83)	45(83)	47(83)	48(83)
*063	16	16	16	16	41	30	38	33	46	37	39	38	49(85)	42(87)	40(93)	47(94)
**063	--	--	16	16	--	--	38	33	--	--	42	39	------	------	43(79)	43(79)
065	15	15	15	15	40	32	37	30	45	41	41	36	46(81)	39(81)	41(81)	48(81)
066	19	19	19	19	38	30	40	36	40	38	49	43	40(75)	40(75)	48(79)	46(79)
067	15	15	15	15	37	28	38	32	39	35	41	38	44(80)	37(79)	44(79)	43(79)
068	16	16	16	16	38	32	38	33	40	36	42	38	44(83)	38(83)	41(83)	40(83)
069	16	16	16	16	34	29	39	32	38	35	42	35	40(79)	37(82)	43(81)	38(81)
070	13	13	13	13	37	30	41	34	40	33	43	41	46(83)	40(83)	48(83)	45(83)
071	17	17	17	17	39	29	37	32	39	36	37	34	45(81)	37(80)	42(80)	39(80)
072	19	19	19	19	40	32	39	34	40	37	51	42	43(84)	41(84)	54(86)	45(87)
073	15	15	15	15	38	30	40	35	47	37	40	40	50(83)	43(83)	49(85)	46(84)
074	17	17	17	17	40	32	42	33	44	36	43	41	43(81)	41(81)	44(81)	45(81)
075	19	19	19	19	37	31	42	35	39	36	47	41	40(80)	37(79)	49(80)	46(80)
076	15	15	15	15	35	31	40	33	37	35	39	40	38(80)	38(80)	43(79)	40(81)
077	17	17	17	17	40	32	39	34	44	39	43	39	45(80)	41(67)	45(79)	43(79)

*Dose level = 100 mg/kg
**Dose level = 46.4, Strain B only

TABLE V (Continued)

BODY WEIGHT CHANGES DURING ORAL ADMINISTRATION

TIME: (weeks)	START (4)				26				52				TERM(weeks)			
STRAIN:	B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)	
SEX:	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
COMPD #																
078	14	14	14	14	37	30	43	36	37	37	40	43	35(78)	40(77)	33(77)	45(77)
079	17	17	17	17	39	30	38	33	45	39	46	41	46(80)	42(78)	46(78)	44(78)
080	17	17	17	17	38	29	37	34	41	33	36	35	44(84)	36(80)	42(80)	42(80)
081	13	13	13	13	37	33	40	37	39	38	45	43	45(80)	47(80)	50(80)	48(80)
082	17	17	17	17	38	34	42	34	39	37	45	38	43(81)	39(81)	47(81)	42(81)
083	19	19	19	19	37	31	38	32	40	39	41	37	42(81)	39(81)	46(83)	42(83)
084	-------		---NO		ORAL		TEST-		-------		-------		-------		-------	
085	16	16	16	16	39	30	40	33	43	36	45	37	45(82)	38(81)	47(83)	42(83)
086	14	14	14	14	36	30	40	34	40	35	42	44	45(80)	39(80)	45(80)	42(80)
087	16	16	16	16	38	30	41	33	45	36	43	38	43(80)	41(80)	46(80)	42(80)
088	17	17	17	17	38	29	37	34	41	33	36	35	44(84)	36(80)	42(80)	42(80)
089	11	11	11	11	28	25	39	28	32	26	35	33	33(54)	28(58)	35(53)	32(60)
090	17	17	17	17	35	31	40	35	37	36	42	38	39(87)	38(83)	44(88)	43(88)
091	15	15	15	15	38	33	41	35	42	40	44	41	45(87)	43(87)	47(88)	45(88)
092	12	12	12	12	39	31	41	34	46	37	47	39	48(87)	42(85)	48(87)	42(87)
093	14	14	14	14	43	29	38	33	50	33	40	36	50(80)	39(80)	43(82)	43(80)
094	13	13	13	13	37	35	38	34	38	39	38	37	45(78)	43(78)	44(78)	41(78)
095	13	13	13	13	37	31	39	33	42	34	41	37	43(80)	37(80)	44(81)	40(80)
096	13	13	13	13	35	29	34	31	35	25	37	33	34(59)	32(70)	35(59)	33(69)
097	13	13	13	13	36	29	38	32	40	36	41	38	42(83)	41(83)	45(83)	47(83)
098	13	13	13	13	36	32	38	32	42	40	38	36	42(85)	44(84)	42(85)	43(86)
099	18	18	18	18	33	28	34	28	36	32	40	32	39(78)	36(78)	44(78)	36(78)
100	13	13	13	13	36	34	40	38	40	43	45	41	41(78)	46(78)	48(81)	44(81)
101	16	16	16	16	33	28	37	30	43	32	40	36	46(83)	35(84)	45(81)	41(82)
102	13	13	13	13	32	31	40	33	36	35	43	39	37(78)	36(78)	46(78)	44(78)
103	15	15	15	15	37	31	37	31	42	37	40	34	46(83)	39(81)	45(81)	41(81)
104	12	12	12	12	35	29	36	31	38	34	39	37	40(80)	39(80)	42(80)	39(80)
105	13	13	13	13	36	29	36	30	41	35	38	36	45(79)	40(79)	43(79)	41(79)
106	13	13	13	13	38	32	38	33	43	39	41	39	46(79)	44(79)	46(79)	44(79)
107	13	13	13	13	39	33	40	35	43	38	42	39	50(77)	44(77)	48(77)	45(77)
108	12	12	12	12	38	32	41	34	39	36	43	37	45(82)	39(81)	45(83)	44(83)
109	15	15	15	15	38	34	44	34	41	38	45	42	37(80)	43(80)	48(80)	43(80)
110	13	13	13	13	37	31	43	35	43	36	44	38	44(81)	41(81)	48(81)	42(81)
111	12	12	12	12	35	29	39	34	37	32	40	36	39(77)	39(77)	42(77)	41(77)
112	14	14	14	14	35	36	39	35	37	41	39	37	40(80)	46(80)	43(80)	44(80)
113	13	13	13	13	40	31	42	36	43	37	40	40	42(81)	42(82)	47(82)	47(82)
114	16	16	16	16	39	33	41	34	41	39	42	37	44(82)	44(82)	47(82)	45(82)
115	13	13	13	13	32	30	39	33	34	31	42	35	37(80)	36(80)	45(80)	38(80)
116	15	15	15	15	36	32	38	35	40	41	43	42	45(82)	42(83)	46(83)	47(83)

TABLE V (Continued)

BODY WEIGHT CHANGES DURING ORAL ADMINISTRATION

TIME: (weeks)	START (4)				26				52				TERM (weeks)			
STRAIN:	B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)	
SEX:	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
COMPD #																
117	14	14	14	14	37	30	37	34	39	35	38	35	41(80)	40(80)	43(80)	42(80)
118	14	14	14	14	34	31	39	32	39	36	41	34	42(80)	45(80)	45(80)	39(80)
119	14	14	14	14	38	30	43	33	44	34	46	38	46(83)	44(83)	50(83)	43(80)
120	12	12	12	12	34	35	42	36	36	43	42	40	39(81)	46(81)	48(81)	44(81)
121	13	13	13	13	35	32	41	35	37	37	41	39	41(81)	44(81)	46(81)	44(81)
122	12	12	12	12	36	30	38	30	37	34	38	34	40(81)	38(78)	42(78)	37(81)
123	12	12	12	12	39	33	34	32	42	38	40	39	45(82)	46(82)	42(82)	43(82)
124	12	12	12	12	37	31	42	34	39	37	43	41	40(82)	40(82)	47(82)	43(82)
125	13	13	13	13	36	27	38	30	44	31	40	35	46(84)	38(83)	43(84)	39(84)
126	----------		---NO		ORAL		TEST		----------		----------		----------		----------	
127	12	12	12	12	35	31	37	32	37	36	37	35	40(83)	41(82)	41(82)	41(82)
128	17	17	17	17	36	28	38	34	40	34	39	39	41(82)	43(82)	46(82)	42(82)
129	13	13	13	13	39	33	41	38	39	38	42	39	42(82)	45(82)	44(82)	46(82)
130	14	14	14	14	36	31	40	35	38	37	40	38	40(84)	40(84)	44(84)	44(84)
131	16	16	16	16	40	33	39	30	40	37	43	35	44(83)	43(83)	45(83)	41(83)
132	16	16	16	16	37	30	36	34	40	39	39	39	44(83)	42(83)	44(83)	45(83)
133	17	17	17	17	36	31	37	33	39	39	37	36	38(83)	42(83)	37(79)	35(83)
134	16	16	16	16	39	30	37	34	44	37	39	39	46(84)	42(83)	36(83)	42(83)
135	16	16	16	16	37	34	40	33	40	43	42	36	45(83)	48(83)	46(83)	41(83)
136	15	15	15	15	38	32	39	33	41	37	41	35	43(81)	45(81)	43(81)	41(81)
137	15	15	15	15	40	31	37	35	42	33	40	39	45(83)	41(83)	44(83)	44(83)
138	16	16	16	16	33	27	36	29	36	38	39	34	40(84)	36(84)	45(84)	39(84)
139	13	13	13	13	36	29	37	31	39	34	38	34	43(84)	38(84)	40(84)	38(84)
*140	17	17	17	17	29	24	29	26	32	28	33	26	33(80)	28(76)	33(76)	27(76)
**140	10	10	10	10	--	--	--	--	--	--	--	--	23(11)	19(15)	18(7)	25(22)
141	16	16	16	16	30	28	34	28	36	33	40	31	38(83)	37(83)	46(83)	37(83)
142	14	14	14	14	38	30	39	34	41	35	43	39	41(83)	42(83)	45(83)	43(83)
143	13	13	13	13	32	29	37	34	40	35	39	40	47(81)	42(81)	45(81)	49(81)
144	----------		---NO		ORAL		TEST		----------		----------		----------		----------	
145	13	13	13	13	37	30	36	31	41	33	40	36	42(83)	39(83)	44(83)	43(83)
146	10	10	10	10	37	31	34	32	38	37	37	36	44(81)	44(81)	44(81)	43(81)
147	11	11	11	11	35	30	38	30	39	35	38	33	43(81)	41(81)	42(81)	38(81)
148	13	13	13	13	34	30	36	32	38	33	40	36	42(80)	40(80)	45(80)	45(80)
149	12	12	12	12	43	28	38	31	44	35	42	37	51(84)	42(84)	46(84)	42(84)
150	12	12	12	12	36	29	37	28	41	32	34	35	43(80)	39(80)	44(80)	42(80)
151	14	14	14	14	37	30	37	32	40	37	42	40	44(82)	42(82)	46(82)	41(82)
152	14	14	14	14	35	28	38	30	39	32	40	34	43(82)	39(82)	47(82)	40(82)

*Dose level = 46.4 mg/kg
**Dose level = 0.1 mg/kg

TABLE V (Continued)

BODY WEIGHT CHANGES DURING ORAL ADMINISTRATION

TIME: (weeks)	START (4)				26				52				TERM(weeks)			
STRAIN:	B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)		B6C3F1 (A)		B6AKF1 (B)	
SEX:	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
COMPD #																
153	15	15	15	15	36	27	35	28	38	30	37	31	40(83)	35(82)	39(82)	38(82)
154	12	12	12	12	34	32	36	28	41	39	39	38	42(79)	44(79)	38(79)	45(79)
156	15	15	15	15	38	30	37	31	42	35	41	34	45(82)	40(82)	45(82)	43(82)
157	15	15	15	15	33	32	39	32	39	39	40	38	44(82)	44(82)	44(82)	45(82)
158	13	13	13	13	36	27	36	31	37	35	42	37	42(82)	39(82)	45(82)	44(82)
159	15	15	15	15	35	30	38	31	40	35	43	36	42(81)	39(81)	46(81)	42(81)
160	15	15	15	15	37	34	35	30	42	36	37	35	46(82)	40(82)	39(82)	39(82)
161	12	12	12	12	36	29	35	30	42	34	39	34	44(82)	37(82)	44(82)	39(82)
162	12	12	12	12	30	24	32	28	31	26	34	28	31(82)	28(82)	35(82)	29(82)
165	12	12	12	12	36	30	35	28	39	37	38	32	44(82)	43(82)	42(82)	38(82)
166	15	15	15	15	36	28	34	30	41	36	37	36	44(81)	41(81)	42(81)	40(81)
167	15	15	15	15	37	30	37	30	39	33	38	34	46(82)	38(82)	43(82)	43(82)
168	14	14	14	14	33	30	34	31	37	34	36	35	38(83)	39(83)	44(83)	39(83)
*169	13	13	13	13	30	32	35	31	31	39	39	39	34(80)	43(77)	41(80)	47(80)
**169	15	15	15	15	33	30	32	28	38	34	38	36	38(77)	35(77)	40(77)	37(77)
170	12	12	12	12	34	29	38	30	42	35	40	33	42(80)	41(80)	45(80)	41(80)
171	12	12	12	12	35	28	36	35	38	32	37	31	39(80)	37(80)	39(80)	38(80)

*Dose level = 2.15 mg/kg
**Dose level = 1.0 mg/kg

Observations

As indicated previously, Table V presents body weight changes during the course of this investigation. These data provide useful information as to animal condition or compound toxicity. In the definitive studies, all cages were checked daily to retrieve dead animals. Careful observations and group weights were taken weekly early in the study and less frequently thereafter. Individuals within groups were not identified until such time as there was a specific reason such as illness or other significant deviation of an individual from the group. Moribund animals were killed and subjected to gross postmortem examination and a decision with respect to microscopic examination of tissues was made according to the circumstances in each individual case.

Controls

The choice of control animals was as follows. Thirty-six animals of each strain of weanlings were selected from each shipment received from the supplier to serve as untreated controls for the subcutaneous studies. In addition, approximately thirty-six untreated controls for every 500 experimental animals of each strain were set aside from infants produced from the in-house breeding program to serve as controls for the oral administration studies. Still other groups of thirty-six control animals received each solvent used in the subcutaneous and oral studies, according to the corresponding route and regimen. Each room was assigned one untreated control group. Other negative control groups and the solvent controls were distributed randomly among the various rooms. The positive controls were also randomly distributed among the rooms and are indicated by asterisk in Table VI, which presents the distribution of the various control groups with reference to the experimental study groups.

TABLE VI

DISTRIBUTION OF COMPOUNDS BY ROOM NUMBER SHOWING SPECIFIC CONTROLS

SUBCUTANEOUS

ROOM 28		ROOM 31		ROOM 32		ROOM 33	
Untreat. Control OB		Untreat. Control OA		Untreat. Control OC		Untreat. Control I	
069	140	Gelatin Control		024	111	Untreat. Control II	
070	147	025	074	078*	112	Untreat. Control III	
082	148	026	076	080	113	Corn Oil Control	
125	151	051	085	081	116	DMSO Control	
128	156	053	086	093	117	027	071
129	157	054	088	095	119	028	072
130	158	056	090	097	120	029	075
131	159	057	091	098	121	030	077
132	160*	058	096	100	122*	031	079
133	161*	059	099	101	126	032	083
134	162*	060	103	102	127	034*	084
135	165	062	105	104	141	047	087
136	166	065	118	106	142	408	089*
137	167	066	123	107	144	049	092
138	168	067	124	108	150	050	094
139	169	068	145	110	152	052	109
	170	073	146		153	061	114
	171		149		154	063	115
							143

ORAL

ROOM 40		ROOM 41		ROOM 42		ROOM 43	
Untreat. Control OD		Untreat. Control OE		Untreat. Control OF		Untreat. Control "0"	
Gelatin Control		047	102	024	114	097	154
025	058	053	105	027	115	099	156
026	060	061	106	029	116	101	157
028	063	062	108	059	117	103	158
030	066	065	109	067	118	104	159
031	072	068	110	070	128	140	160*
032	073	069	113	071	130	142	161*
034*	079	073	119	078*	132	143	162*
048	083	074	120	080	133	145	165
049	085	075	121	081	134	146	166
050	089*	077	122*	082	135	147	167
051	090	086	124	088	136	148	168
052	091	087	125	094	138	149	169
054	092	093	127	107	139	150	170
056	098	095	129	111	141	151	171
057	123	096	131	112	152		
		100	137		153		

* Indicates Positive Control

Pathology - Necropsy and Histologic Procedures

Before starting the massive sacrifice, several pilot runs were made to practice and to give some tuition to technical assistants (relatively untrained) on the anatomy, pathology and dissection methods used in rodents. A definitive plan was formulated and is described below; it remained almost unchanged from start to finish. On many occasions it was necessary to kill more than 800 mice on one day and sometimes two days per week.

Killing of the various groups of mice was begun in June, 1966 and the last experimental group was killed on November 16, 1967. The number of mice were as follows: experimental mice (including positive controls) 18,768; negative controls 999; out of those mice started on the study, a total of 525 were missing, i.e., died and were cannibalized. This is a surprisingly small number. The loss usually ocurred over a weekend during a period of reduced staffing.

Each experimental group was given a reallocated post-mortem (P.M.) number with the mouse number (1 to 144) following. A whole day was necessary for three assistants to fill bottles with formalin-saline, attach a label with the identification numbers and place one dozen bottles in each box (which also had the same numbers on a label).

All mice in the experimental and control groups had a blood smear taken the day before killing. These were air dried, fixed in methyl alcohol, given the same identification number and placed in boxes. Only those smears from mice which showed splenomegaly, liver enlargement or lymph-adenopathy were stained and examined by our hematologist.

The mice from each group were killed by ether when approximately 18 months of age, pinned on their backs (six to a board) and numbered 1 through 144 consecutively. Four assistants were responsible for this stage of the work and for dissection of the mouse as follows: An incision was made from the neck to the pubis and the skin reflected; another cut was made to expose the neck structures and various nodes and then the abdomen and thorax were opened. A quick examination of the dissected mice was made by a pathologist. Obviously, with the huge numbers of mice which were to be examined, there was a limit as to time and what could be done by way of dissection. The primary object of the experiment

was to look for signs of carcinogenic action of compounds in any organ and, in those mice injected subcutaneously, to look for tumors in the nape of the neck (none were ever found). Incidental diseases (lesions) were noted. Notes were made per mouse on a single line of the report form on lesions found macroscopically. The boards with the six mice were then handed to assistants who showed remarkable skill in dissection after very short training in identifying organs, tissues and lesions. They completed the dissection by taking the total chest contents, liver, spleen, kidneys with adrenal glands, stomach (fixed whole), intestines, genital organs of male and female mice and placing all in formalin saline. The head was severed from the body and all remains placed in fixative. Some of the tissues remained in the fixative for months or a year before the bottles were opened and selected tissues taken for histological processing. Sections were stained by hematoxylin-eosin. In mice in which no tumor or other lesions were found, it was usually possible to get all tissues on one or two slides. The slides were identified by PM and mouse numbers. After microscopic study, the report was completed by a pathologic diagnosis or listed as Negative. A summary sheet was then made for each compound. Samples of a PM report and the Summary follow.

SAMPLE

PM # 66/756

096-B 2M01 31

PATHOLOGY REPORT, CARCINOGENESIS SCREENING STUDY, PROJECT 16

096

Compound # & Name Mirex

Dose Level 1000 mg./kg.

Route of Admin. Subcutaneous

Sex & Strain B6C3F1 Male

Date Sacrificed 10-6-66

Room 31 Rack ___ Cage(s) ___

Dissection Key

Region 1. Skin, nose, eyes, ears, external genitals and anus, feet, tail.
2. Subcutaneous tissue, muscle, mammary glands, testes.
3. Salivary glands, thyroid, tongue, body lymph nodes.
4. Trachea, bronchi, thymus, lungs, heart.
5. Liver, gallbladder, stomach, intestines, spleen, kidneys, adrenals.
6. Ovaries, uterus, testes, prostate.
7. Brain, hypophysis, spinal cord.

Animal I.D.#	Pathology - Macroscopic	Microscopic
1	Pulmonary nodule right; splenomegaly; pancreatic node enlarged	Reticulum cell sarcoma - type A - spleen, nodes, liver, lung.
2	Negative	Negative
3	Small nodule right lung; marked splenomegaly; enlarged pancreatic node	Reticulum cell sarcoma - type A - spleen, liver, kidney, nodes, lung.
4	Query left lobe; small liver mass; mild splenomegaly.	Negative
5	Negative	Negative
6	Negative	Negative
7	Query pulmonary nodule right; fragile liver; splenomegaly; enlarged abdominal node	Reticulum cell sarcoma - type A - spleen, liver, nodes, lungs.
8	Negative	Negative
9	Splenomegaly; query thymus; nodules liver; enlarged nodes.	Reticulum cell sarcoma - type A - spleen, lung, node; hepatoma.
10	Pulmonary nodule left	Focal pneumonia.
11	Pulmonary nodule right	Pulmonary adenoma.
12	Small liver mass	Negative
13	Negative	Negative
14	Pulmonary nodule right	Negative
15	Multiple liver masses	Hepatoma
16	Negative	Negative
17	Enlarged spleen and liver.	Reticulum cell sarcoma - type A - liver and spleen.
18	Query liver.	Reticulum cell sarcoma - type A - liver.

SAMPLE

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/756

Compound Name Mirex Date Killed 10-6-66

Compound No. 096-B, Subcutaneous Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months *	16	17	17	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	1	3
No. mice negative (killed and died)	9	16	7	5
No. mice died with tumors	2	0	0	3
No. mice killed with tumors	6	1	6	2
No. mice killed or died, other diseases	1	1	5	8
Tumors Lymphatic leukemia	0	0	0	0
Reticulum cell sarcoma, Type A	6	0	1	3
Reticulum cell sarcoma, Type B	0	0	0	0
Pulmonary adenoma	1	0	2	0
Pulmonary carcinoma	0	0	0	0
Hepatoma	2	0	4	1
Hepatic carcinoma with pulmonary metastases	0	0	0	0
Mammary carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	9	1	7	5
Common other Lesions				
Follicular hyperplasia - any site	0	1	0	0
Lymphoid infiltrate - any site	0	1	4	9
Focal pneumonia	1	1	3	2

Signed: _____

Pathology - Nomenclature

We wish to avoid entering the lists in the controversial field of neoplastic nomenclature which has existed since Virchow (See classic texts starting with Cohnheim, Borst, Ribbert, Ewing and Mallory to Willis and the AFIP Fascicles.) It now occupies the attention of International Committees and applies to all mammalian tumors; the base line was human oncology originally started by Müller and his pupil, Virchow. As an example of the chaos in some fields, we refer to Willis who lists twenty names given to tumors of lymphoid tissues, many of which are variants of one disease. Harvey, et al.[47] discussed the debatability of the giant cell tumor of bone with its eleven names. In the case of tumors of the brain there is great diversity of opinion which becomes more apparent when attempts are made to transfer human medical classifications to the lower animals, especially experimental laboratory animals. Often it is impossible, and we have chosen to be cautious in doing so. Therefore, we feel that it is necessary to define what is meant by some of the designated tumors occurring in the two hybrid strains.

Nomenclature is dealt with in every standard modern text on the pathology of tumors. We can refer to a few: Willis; Bonser, et al.[48] on human and experimental breast cancer; the International Union Against Cancer with its "Illustrated Tumor Nomenclature"[49]; Cotchin and Roe[50] with chapters on hepatic and alimentary neoplasms of rats and mice; and Cohrs, et al.[51]

Chapters by Dunn (mammary tumors of mice), by Stewart (pulmonary tumors), and by Stewart and Snell (experimental hepatic tumors) are found in Homburger[52]. A monumental, well-illustrated monograph by Dunn[53] dealt with neoplastic diseases, and their classification, of the reticular tissue of mice.

It would be an imponderable task to review the facts presented in the above publications, nor is it necessary for the purpose of our report. The important fact is that the reader must understand our use of terminology.

Some of the classes of tumors require virtually no explanatory comment because diagnosis presents little difficulty and it is doubtful if there would be much debate in an assembly of pathologists whether medical, veterinary or experimental. An abbreviated list of this group follows; most of these tumors were extremely rare.

1. Mammary fibroadenoma and carcinoma
2. Seminoma (one case)
3. Ovarian teratoma (one case)
4. Adenocarcinoma of salivary gland
5. Osteogenic sarcoma with metastases
6. Squamous cell carcinoma of the skin
7. Fibrosarcoma (subcutaneous and mammary)
8. Lipoma
9. Gastric papilloma
10. Adrenal cortical adenoma
11. Leiomyoma (intestine and uterus)
12. Thymoma

The "angioma" or "hemangioma" (also referred to as a hemorrhagic cyst) so frequently seen in the spleen and in the liver may not be a tumor but a hamartoma; or it may be sinusoidal ectasis (telangiectasis). There were other tumors which occurred in the mice but with an infinitesimally small incidence.

It thus remains to consider a restricted variety of the common tumors; they are commented upon below.

Malignant Lymphoma, Leukemia and Reticulum-cell Sarcoma Arising in Lymphoreticular Tissue

This topic was fully covered in the illustrated monograph of Dunn[53], and we have followed her definitions. Tumors arising as myeloproliferative forms need not be considered because we observed only one case of myelogenous leukemia in the total of over 20,000 mice examined.

Blood smears were taken from all mice the day before killing. They were stained only if these mice showed splenomegaly, lymphadenopathy, liver enlargement or all three. If there were definite hematologic findings, a diagnosis of malignant lymphoma with leukemia was made; otherwise it was left as lymphoma or malignant lymphoma. These conditions were extremely rare. Reticulum cell sarcoma was classed by Dunn into two main catagories, A and B. They most commonly arise in the spleen (splenomegaly), abdominal lymph nodes, Peyer's Patches, thymus and the liver. A multicentric origin is possible as these tissues occasionally showed foci, but few if any mice ever showed "leukemia", i.e., circulating metastases. In one type (A), multinucleated giant cells (Reed-Sternberg-like) are very numerous. The pathogenesis has been discussed by Siegler and Rich[54]. In our analysis of carcinogenic activity, which follows in Results, it was decided to group all reticulum cell sarcoma together as one.

Pulmonary Adenoma

We have referred to published work such as that by Stewart[52] and we might add the several quotations he makes to studies by Heston. The terms

alveologenic or bronchogenic adenoma and carcinoma have been used almost synonymously by various workers. Although we have used both terms, in the opinion of many pathologists in the experimental field such a distinction is largely artificial and meaningless. Some workers simply refer to "pulmonary tumors". The dividing line between the classical adenoma and bronchogenic carcinoma thus becomes very thin.

We used the term pulmonary adenoma to refer to a single tumor or a lung with 2-3 discrete nodules in which the tubular character of epithelial growth was unmistakable histologically. In this class, true metastatic spread is virtually nonexistent but the tumor is transplantable. In mice treated with a strong carcinogen, e.g. urethane, lung tumors may occur with a very high morbidity rate. Time (survival of the mouse) after experimental treatment may be all important. As Heston[52] has pointed out, in such experimental groups the numbers of individual growths in the lung may be almost uncountable. Some of the nodules are almost certainly examples of multicentric origin but might also include intrapulmonary spread. It was these tumors that we occasionally designated as "bronchogenic carcinoma". Metastases in this group are not common. Histologically, the benign "tubular-adenomatous look" may be lost. The tumor becomes more anaplastic in type to such an extent that areas will be found almost like the oat cell carcinoma of man. In some of our mice there was a tendency for such growths to invade the pleural cavity and from thence, by contiguity, to the heart, although this is not exactly an example of metastasis.

Hepatoma

Experimental tumors of the liver of the rat were dealt with by Stewart and Snell[52] and many of the features concerning histogenesis are applicable to the mouse (see also Lemon [50] on rats and mice). A great variety of names have been applied to the different morphologic forms of tumors arising in the liver. According to Stewart and Snell, there are structures with a trabecular carcinomatous pattern, others with an adenocarcinomatous pattern, others with a more anaplastic nature and a sarcomatous pattern. The hepatic tumors in our series were locally invasive often with massive involvement of the liver causing death. The term hepatoma was applied to all tumors unless there were unmistakable pulmonary metastases and this was rare. In these cases they are classified as hepatic carcinoma.

Other Tumors

Other tumors which occurred with frequency, and then only in mice dosed with chemical compounds, were (a) the Harderian gland adenoma after urethane (#034) administration and (b) the carcinoma of the thyroid after Amitrol (#089) administration. Both have been well documented.

No cases of the first mentioned tumor (originally described by Tannenbaum and Silverstone[55] occurred in any of the control groups. The tumor was locally invasive and by expansile growth it forced the eye out of the orbit to become traumatized, infected and destroyed. Metastasis was never observed.

Only one carcinoma of the thyroid gland was found in 100 control mice examined histologically. In the Amitrol-treated group, the thyroid tumor was locally invasive, rarely spread to the regional nodes and caused massive enlargement of the gland.

Non-fatal Incidental Lesions in the Two Hybrid Strains

In any strain of adult mice which survive 18 months or longer, a great variety of incidental lesions will be found which cannot be related to the experimental treatment and, in this case, to compounds being tested for carcinogenic activity. The same range of lesions, and others, were found in the different experimental groups, only with variation in incidence. Additional diseases were found as extreme rarities, e.g. necrotising arteritis, chronic nephritis, fatty metamorphosis of the liver, subcutaneous phycomycosis, amyloidosis of the kidney, and ceroid degeneration of the adrenal glands to mention but a few. Comments follow on some of the lesions.

Focal pneumonitis was usually a minute atelectatic focus visible to the naked eye on the slide and containing alveolar phagocytes with an unidentifiable foreign body (vegetable matter?) which had probably been aspirated from the dust of the food.

Lymphoid infiltrations were extremely common. They tended to sheath tubular structures such as the bronchi and the bronchioles, the medium-sized arteries, the ureter, the renal pelvis, the perirenal tissues and liver. Often all these structures were involved in one mouse. The relationship between the lymphoid infiltration and neoplasia of the reticular tissue is obscure and has been discussed by Dunn[53]. It might have originated because one of the parent stock of the hybrid strains had a reputed high incidence of leukemia.

We have discussed tumors of the lympho-reticular tissue, i.e., reticulum sarcoma, leukemia and malignant lymphoma. We must comment on the lesion designated "follicular hyperplasia" of the spleen. The condition was defined as splenomegaly, sometimes very gross, but without any concomitant lymphadenopathy or liver involvement and with a normal blood picture. Essentially, the lesion was hyperplasia of the Malpighian corpuscles.

Statistics

On the basis of the negative control finds, shown in Table VII (613 mice in the subcutaneous negative control group, 338 in the oral negative control group), the significance of the study data has been determined at the P=.05 and P=.01 levels for the total mice with tumor, with reticulum cell sarcoma, pulmonary adenoma and hepatoma. Utilizing the procedures that are fully described in the references[1,56,57] the Chi Square Method (Fourfold Table) was employed, using numbers of necropsied mice and numbers of mice with tumors. For the three specific tumor types, the Yates Correction has also been employed and, in each instance, the data were treated as though each mouse with a tumor was affected with a single tumor, which is true in most instances. To assist the reader in interpreting the data presented in the Summary Tables (XI, XV and XVII through XXXVI), Tables VII and VIII are presented. These latter tables show the minimum tumor incidence in both the subcutaneous and oral studies that can be regarded as significant at both P=.05 and P=.01 for any specified number of mice necropsied in the study group. In addition, these tables present the expected tumor incidence based upon the number of control mice necropsied in each of the subcutaneous and negative control groups. It should be called to the reader's attention that study groups were compared to all comparable controls, e. g., all subcutaneous control groups, including solvent controls, were compared to subcutaneous study groups. Strain and sex were ignored in the initial computation of data. No consideration was given to the respective room controls. Sufficient detail of data is presented to permit the interested reader to derive additional statistical data.

TABLE VII

NUMBER OF EXPECTED TUMORS AND MINIMUM TUMOR INCIDENCE IN SUBCUTANEOUS STUDY MICE THAT CAN BE REGARDED AS SIGNIFICANT AT P=.05 AND P=.01 LEVELS FOR SPECIFIED NUMBERS OF MICE NECROPSIED IN THE STUDY GROUP*

No. of mice necropsied in the study group	Expected total mice with tumor	P=.05 Level				P=.01 Level			
		Total mice with tumor (1)	Reticulum cell sarcoma (2)	Pulm. Adenoma (3)	Hepatoma (4)	Total mice with tumor (1)	Reticulum cell sarcoma (2)	Pulm Adenoma (3)	Hepatoma (4)
72	7	13	5	8	4	15	7	10	6
71	7	13	5	8	4	15	7	10	6
70	7	13	5	8	4	15	6	10	5
69	7	13	5	8	4	14	6	10	5
68	7	13	5	8	4	14	6	10	5
67	7	12	5	8	4	14	6	9	5
66	7	12	5	8	4	14	6	9	5
65	6	12	5	7	4	14	6	9	5
64	6	12	5	7	4	14	6	9	5
63	6	12	5	7	4	13	6	9	5
62	6	12	5	7	4	13	6	9	5
61	6	12	4	7	4	13	6	9	5
60	6	11	4	7	4	13	6	9	5
59	6	11	4	7	4	13	6	9	5
58	6	11	4	7	4	13	6	9	5
57	6	11	4	7	4	13	6	9	5
56	6	11	4	7	4	12	6	8	5
55	5	11	4	7	3	12	6	8	5
54	5	11	4	7	3	12	6	8	5
53	5	10	4	6	3	12	6	8	5
52	5	10	4	6	3	12	5	8	5
51	5	10	4	6	3	12	5	8	5
50	5	10	4	6	3	11	5	8	5

* Using Chi Square Method "Fourfold Table" - Yates Correction used for all but total tumors.

Based on 613 Mice Necropsied in the Total Negative Control Groups:

(1) of which 61 developed tumors.

(2) of which 14 developed reticulum cell sarcoma.

(3) of which 30 developed pulmonary adenoma

(4) of which 10 developed hepatoma.

TABLE VIII

NUMBER OF EXPECTED TUMORS AND MINIMUM TUMOR INCIDENCE IN ORAL STUDY MICE THAT CAN BE REGARDED AS SIGNIFICANT AT P=.05 AND P=.01 LEVELS FOR SPECIFIED NUMBERS OF MICE NECROPSIED IN THE STUDY GROUP*

No. of mice necropsied in the study group	Expected total mice with tumor	P=.05 LEVEL				P=.01 LEVEL			
		Total mice with tumor (1)	Reticulum cell sarcoma (2)	Pulm. Adenoma (3)	Hepatoma (4)	Total mice with tumor (1)	Reticulum cell sarcoma (2)	Pulm adenoma (3)	Hepatoma (4)
72	11	19	7	9	8	21	9	12	10
71	11	19	7	9	7	21	9	12	10
70	11	18	7	9	7	21	9	12	9
69	11	18	7	9	7	20	9	11	9
68	11	18	7	9	7	20	9	11	9
67	11	18	7	9	7	20	9	11	9
66	10	17	7	9	7	20	9	11	9
65	10	17	7	9	7	19	9	11	9
64	10	17	7	9	7	19	9	11	9
63	10	17	7	9	7	19	8	11	9
62	10	17	6	8	7	19	8	11	9
61	10	16	6	8	6	18	8	10	9
60	9	16	6	8	6	18	8	10	9
59	9	16	6	8	6	18	8	10	8
58	9	16	6	8	6	18	8	10	8
57	9	15	6	8	6	17	8	10	8
56	9	15	6	8	6	17	8	10	8
55	9	15	6	8	6	17	8	10	8
54	8	15	6	8	6	17	8	10	8
53	8	15	6	8	6	16	8	10	8
52	8	14	6	7	6	16	7	9	8
51	8	14	6	7	6	16	7	9	8
50	8	14	6	7	6	16	7	9	8

* Using Chi Square Method "Fourfold Table" - Yates Correction used for all but total tumors.

Based on 338 mice necropsied in the total negative control groups

(1) of which 53 developed tumors

(2) of which 13 developed reticulum cell sarcoma

(3) of which 20 developed pulmonary adenoma

(4) of which 14 developed hepatoma

RESULTS

Mode of Tabulation of Pathologic Findings

The layout of Tables XI, XV and XVII through XXXVI is the same. The compounds are presented in the same order as in Table II and in Volume II. Essentially, these Tables summarize the tumor findings and the incidental lesions for all the mice by strain and by sex. The detailed findings of the incidental lesions can be found in Volume II of this report, which presents the Pathology Summary Sheets. Since these summary sheets were prepared at the time of the pathologic readings, the format of presenting the data is not the same as in the Tables. The type of statistical approach used in this report required reorganizing the data. To assist the reader in referring back and forth from one set of Tables to the other, the information contained in Tables IX and X may be of value.

One further explanation of Tables XI, XV and XVII through XXXVI, the total mice with a tumor (for all mice necropsied) indicates the number of mice (before the parenthesis) and the number of tumors in these mice (within the parenthesis). Gastric papillomas and all non-neoplastic incidental lesions are not included in the totals, hence these are presented in the last two columns separated from the tumors by type. The validity of such an approach may well be questioned especially in view of the extremely high incidence of gastric papillomas found in mice receiving dihydrosafrole orally (#160). We urge the reader to consider the incidental lesion in evaluation of the data. For example, piperonyl butoxide (#027) showed a high incidence of incidental lesions in the males of Strain A (B6C3F1). This group also had a high incidence of reticulum cell sarcomas. The importance of the incidental findings becomes apparent when one refers to Volume II (Pathology Summary Sheets) and finds that 8 of the 13 lesions were follicular hyperplasia of the spleen. One wonders whether these would have developed into frank tumors if the study had continued longer.

TABLE IX

COMPARISON OF COLUMNS IN RESULTS TABLES TO ITEMS APPEARING ON SUMMARY SHEETS*

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start (M, F)	Mice Lost, Died, or Cannibalized before the End of the Study: Total (M, F)	Not Necropsied (M, F)	Necropsied: With (2) Tumor (M, F)	Necropsied: Without Tumor (M, F)	Mice Survived to End of Study and Killed: Total (M, F)	With (2) Tumor (M, F)	Without Tumor (M, F)	Total Mice Necropsied (M, F)	Total Mice (4) With (2) Tumor (M, F)	Number of Cancers by Type: Malignant Lymphoma with Leukemia (M, F)	Reticulum Cell Sarcoma (M, F)	Pulmonary Adenoma (M, F)	Pulmonary Carcinoma (M, F)	Hepatoma (M, F)	Hepatic Carcinoma with Lung Metastasis (M, F)	Mammary Carcinoma (M, F)	Other Tumors (M, F)	Gastric Papillomas (M, F)	Localized Tumors (M, F)
			Item 1	Item 1 minus Item 2	Item 5 plus those died and not able to be necropsied	Item 6 less gastric papilloma mice or mice with only granulomas in parentheses (those parts of Items 9 through 18 minus granulomas)	Column B minus Columns C and D	Item 2	Item 7 less gastric papilloma mice or mice with only granulomas in parentheses (those parts of Items 9 through 18 minus granulomas)	Column F minus Column G	Column A minus Column C	Item 6 plus Item 7 less gastric papilloma mice or mice with only granulomas in parentheses (sum of figures in Columns D and G — or — of Items 9 through 18 minus granulomas)	Item 9	Item 10 plus Item 11	Item 12	Item 13	Item 14	Item 15	Item 16	Item 18 minus Item 19 minus granulomas	Item 19	Item 20 plus granulomas
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T

*Item numbers are listed in reference Table X which follows.

A

B

TABLE X. SAMPLE SUMMARY SHEET WITH ITEM NUMBERS FOR REFERENCE WITH TABLE IX

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No._____

Compound Name_____ Date Killed _____

Compound No. _____ Date Completed _____

		B6C3F1		B6AKF1	
		Male	Female	Male	Female
1.	No. mice at start				
2.	No. mice surviving 18 months				
3.	*No. mice missing (no necropsy or tissue missing)*				
4.	No. mice died during experiment				
5.	No. mice negative (killed and died)				
6.	No. mice died with tumors				
7.	No. mice killed with tumors				
8.	No. mice killed or died, other diseases				
9.	Tumors Lymphatic Leukemia				
10.	Reticulum Cell Sarcoma, Type A				
11.	Reticulum Cell Sarcoma, Type B				
12.	Pulmonary Adenoma				
13.	Pulmonary Carcinoma				
14.	Hepatoma				
15.	Hepatic Carcinoma with Pulmonary metastases				
16.	Mammary Carcinoma				
17.	Carcinoma, skin				
18.	Other types				
19.	Gastric papilloma				
	Granuloma				
	Others				
	Total Number of Tumors				
20.	Common other Lesions				

Signed:_____

BRL Fm. #449

Incidence of Neoplastic and Incidental Diseases in Control Mice

Table XI presents the results of tumor incidence in all groups of control animals. It is apparent without any statistical analysis that the two hybrid strains (males or females) have very low incidence of neoplastic diseases of any variety. For example, there were only two cases of leukemia, no cases of reticulum cell sarcoma (Type B), one case of pulmonary carcinoma, no cases of hepatic carcinoma with pulmonary metastases and only two cases of mammary carcinoma. The other tumors more commonly found were:

Reticulum cell sarcoma (Type A) -	13 males and 5 females (strain A) 1 male and 8 females (strain B)
Pulmonary adenoma - - - - - - - -	15 males and 7 females (Strain A) 15 males and 13 females (strain B)
Hepatoma - - - - - - - - - - - -	17 males and 0 females (strain A) 6 males and 1 female (strain B)

Reticulum cell sarcoma arose in the mesenteric and pancreatic lymph nodes and occasionally from Peyer's Patches; it was locally invasive and commonly involved the liver, spleen and lungs. It might have a multicentric origin in these organs.

Table XII presents a listing of other tumors which were found. Note that of the 17 additional tumors 13 were in strain A (B6C3F1). Table XIII lists other incidental diseases which occurred (all of which are found in almost any strain of adult mice).

The obvious low incidence of all types of neoplastic diseases suggests that the strains used are valuable for studies in chemical carcinogenesis.

TABLE XI
NEGATIVE CONTROL MICE

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Dead, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F
Untreated Control - OA Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OB Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OC Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control I Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control II Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control III Subcutaneous		A	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gelatin Control Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Corn Oil Control Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DMSO Control Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Negative Control Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OD Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OE Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OF Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - "O" - Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gelatin Control Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Negative Control Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
All Negative Control Subcutaneous and Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	F	Reticulum Cell Sarcoma M	F	Pulmonary Adenoma M	F	Pulmonary Carcinoma M	F	Hepatoma M	F	Hepatic Carcinoma with Lung Metastasis M	F	Mammary Carcinoma M	F	Other Tumors M	Other Tumors F	Gastric Papilloma M	F	Incidental Lesions M	F
Untreated Control - OA Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OB Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OC Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control I Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control II Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control III Subcutaneous	A	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gelatin Control Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Corn Oil Control Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DMSO Control Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Negative Control Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OD Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OE Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - OF Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Untreated Control - "O" - Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gelatin Control Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Negative Control Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
All Negative Control Subcutaneous and Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A = [illegible]
B = [illegible]
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

A B

TABLE XIII

INCIDENTAL LESIONS FOUND IN CONTROL MICE

LESIONS	MALE	FEMALE	
Pneumonitis (focal foreign body)	37	29	
Focal pneumonia	33	16	
Aspiration pneumonia	12	12	
Follicular hyperplasia, spleen	9	1	
Lymphoid infiltration; lungs, liver, renal pelvis and perirenal tissue	8	30	
Focal gastritis	3	1	
Focal hyperkeratosis, stomach	3	2	
Granuloma, mesenteric	2	0	
Cystic endometritis or hydrometra	0	5	
Cystic seminal vesicles	1	0	
Dilated lymphatics	0	2	
Myocarditis	1	0	
Lymphoid depletion	1	0	
Lymphoid nodule (liver)	0	1	
Subtotals	110	99	
TOTAL:			209

Incidence of Neoplastic and Incidental Diseases in Positive Control Mice

Any well-designed experimental project involving the assay of chemical carcinogenesis must include studies on (a) untreated control animals and others treated with the vehicles used to administer any compound and (b) other groups which had been given doses of strong carcinogens by oral and by subcutaneous routes. This procedure was adopted in our experimental study with great profit. Comments have been made regarding the pathologic observations made on the untreated control mice. It was proved that the two hybrid strains of mice, surviving 18 months, showed a remarkably low incidence of all varieties of "spontaneous neoplastic disease" (Table XI and XII). Consequently, any increase in individual types of total tumors, produced by the activity of chemical substances suspected to be carcinogenic, would have enhanced significance. The following table (Table XIV) summarizes the results of the positive control compounds. The detailed findings are presented in Table XV. The high morbidity rate (and occasionally mortality) found in the positive control mice was beyond all doubt. This will be seen in scanning Table XV. Some of the compounds have an historic place in studies on chemical carcinogenesis and urethane can be cited as a good example. First introduced as an intravenous anesthetic, it was found some ten years later to have a depressant effect on bone marrow and was used to treat lymphatic leukemia in human beings and dogs; its strong multipotential carcinogenic activity was not discovered until years later.

There can be no doubt that the methods used in this study on pesticides (i.e., an assay of carcinogenic activity) were highly satisfactory because the strong carcinogens serving as positive controls were identified with ease. For example, in the case of urethane (Table XV, compound # 034) given orally to strain B; pulmonary adenoma occurred in 14 males and 12 females, a hepatoma in 11 males and 5 females, adenoma of the Harderian gland in 11 males and 7 females. The total mice necropsied was 22 males and 19 females. In both strains of mice there were only three which did not show the presence of a tumor and many mice had tumors in all three locations, viz. lung, liver and Harderian glands. The pathologic findings on experiments with Amitrol (compound # 089) are also given in Table XV. All surviving mice in both strains developed hepatoma; in 64 out of 67 mice carcinoma of the thyroid was found.

All compounds administered orally were carcinogenic. Only urethane and ethylene imine were carcinogenic by the subcutaneous route. Most of these facts had been previously observed by other workers using other strains of mice.

TABLE XIV

STATISTICAL EVALUATION OF TOTAL TUMORS AND THE THREE MOST PREVALENT TUMORS IN ANIMALS RECEIVING POSITIVE CONTROL COMPOUNDS

Subcutaneous and Oral Studies

CHEMICAL COMPOUND	COMP. NO.	TOTAL TUMORS		RETICULUM CELL SARCOMA		PULMONARY ADENOMA		HEPATOMA	
		sc	po	sc	po	sc	po	sc	po
Ethyl carbamate	034	X	Y	-	Y	X	Y	X	Y
Amitrol	089	-	Y	-	-	-	-	-	Y
Ethylene imine	078	Y	Y	-	-	Y	Y	-	Y
Aramite	122	-	Y	-	-	-	-	-	X
Dihydrosafrole	160	-	Y	-	-	-	Y	-	Y
Isosafrole	161	-	-	-	-	-	-	-	X
Safrole	162	-	Y	-	-	-	-	-	Y

X: probability = .05
Y: probability = .01

sc = subcutaneous
po = per os (oral)

TABLE XV
POSITIVE CONTROL MICE

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Dead, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	Incidental Lesions M	Incidental Lesions F
Ethyl Carbamate (Urethane) Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Carbamate (Urethane) Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	(4) See footnote	(5) See footnote	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	(6) See footnote	(7) See footnote	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17 Thyroid Carcinoma	15 Thyroid Carcinoma	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14 Thyroid Carcinoma	13 Thyroid Carcinoma	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	(8) See footnote	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	122	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) [illegible]

(4) 2 Angioma
1 Lymphoma
1 Adenoma Hard. Gland

(5) 4 Angioma
5 Adenoma Hard. Gland

(6) 4 Angioma
11 Adenoma Hard. Gland

(7) 11 Angioma
7 Adenoma Hard. Gland

(8) 1 [illegible]
1 Bronchogenic Sarcoma
4 Bronchogenic Carcinoma

A

B

Incidence of Neoplastic and Incidental Disease in Experimental Mice

Table XVI presents a summary of the pertinent findings from the data obtained in both the oral and subcutaneous studies of experimental compounds. As can be seen, a total of 55 different compounds were active by either route of administration;35 orally, 31 subcutaneously and only 10 by both routes. Active compounds are defined as those which were statistically significant by the Chi square method with respect to four catagories only, Total Tumors, Reticulum Cell Sarcoma, Pulmonary Adenoma and Hepatoma.

By our classification, every group of compounds had at least one active member (by either route) with the exception of the Herbicides: S-Triazines. In Insecticides: DDT Type (Table XVII) every member of the group was active. The Insecticides: Other Chlorinated Hydrocarbons (Table XIX) also showed many active members. Eleven of the 26 Dithiocarbamate compounds (Table XXI) were active.

We call attention to the fact that some of the studies were incomplete, i.e., too many animals were missing, cannabilized or died (without autopsy) prior to the end of the study. However, if this occurred early enough in the study, the next lowest dosage level was studied.

The single most predominant tumor was the hepatoma and we refer the reader to the Section titled Pathology - Nomenclature.

Further manipulation and interpretation of these data we leave to the reader.

TABLE XVI

STATISTICAL EVALUATION OF TOTAL TUMORS AND THE THREE MOST PREVALENT TUMORS IN ANIMALS RECEIVING EXPERIMENTAL COMPOUNDS

Subcutaneous and Oral Studies

CHEMICAL COMPOUND	COMP. NO.	TOTAL TUMORS		RETICULUM CELL SARCOMA		PULMONARY ADENOMA		HEPATOMA	
		sc	po	sc	po	sc	po	sc	po
Insecticides: Carbamates									
IPC	048	-	X	-	-	-	-	-	-
Zectran	149	-	-	-	-	-	-	-	X
Insecticides: DDT Type									
Perthane	072	-	-	-	-	-	-	-	Y
O,P'-DDD	052	X	X	-	X	-	-	X	-
P,P'-DDD	067	X	X	Y	-	-	Y	-	-
P',P'-DDT	065	-	Y	Y	X	-	-	-	Y
Chlorobenzilate	168	-	Y	-	-	-	-	-	Y
Insecticides: Other Chlorinated Hydrocarbons									
Thiodan	169	-	X	-	-	-	X	-	-
Strobane	171	-	Y	-	X	-	-	-	Y
Mirex	096	Y	Y	Y	-	-	-	Y	Y
Insecticides: Synergists									
Piperonyl sulfoxide	028	-	-	X	Y	-	-	-	-
Piperonyl butoxide	027	-	-	-	X	-	-	-	-
n-propl isome	029	-	-	Y	-	-	-	-	-
Butacide	092	X	-	-	-	-	-	-	-
Insecticides: Various Structures									
Bis-(2-chloroethyl)ether	109	-	Y	Y	-	-	-	-	Y
Herbicides: Urea Derivatives									
Monuron	059	-	-	-	-	-	X	-	-
Ethylene urea	157	-	-	Y	-	-	-	-	-
Herbicides: Growth Regulators 2,4-D Type									
2,4-D isooctyl ester	032	Y	-	Y	-	-	-	-	-
Herbicides: Growth Regulators									
Azobenzene	110	-	-	-	-	-	-	-	Y
n-(2-hydroxyethyl)-hydrazine	154	-	Y	-	-	-	-	-	Y

X: probability = .05
Y: probability = .01

sc = subcutaneous
po = per os (oral)

TABLE XVI (Continued)

STATISTICAL EVALUATION OF TOTAL TUMORS AND THE THREE MOST PREVALENT TUMORS IN ANIMALS RECEIVING EXPERIMENTAL COMPOUNDS

Subcutaneous and Oral Studies

CHEMICAL COMPOUND	COMP. NO.	TOTAL TUMORS		RETICULUM CELL SARCOMA		PULMONARY ADENOMA		HEPATOMA	
		sc	po	sc	po	sc	po	sc	po
Herbicides & Other Agricultural Chemicals									
Calcium cyanamide	124	-	-	-	Y	-	-	-	-
CCC	156	-	-	-	-	-	-	-	Y
Fungicides/Acaricides: Chlorinated Phenols									
2,4,6-trichlorophenol	097	-	Y	-	X	-	-	-	X
2,3,4,6-tetrachlorophenol	084	X	-	Y	-	-	-	-	-
Genite-R99	165	-	-	X	-	-	-	-	-
Fungicides: Nitrobenzene Derivatives									
PCNB	060	-	Y	-	-	-	-	-	Y
Vancide PB	081	X	-	Y	X	-	-	-	-
Karathane	094	X	-	X	-	-	-	-	-
Fungicides: Quinones									
Chloranil	073	-	X	-	-	-	-	-	Y
Dichlone	076	-	-	Y	-	-	-	-	-
Fungicides: Thiophthalimides									
Captan	026	-	-	-	-	-	-	-	X
Fungicides: Dithiocarbamate Compounds									
SDDC	049	-	X	-	-	-	X	-	X
Zineb	051	X	-	Y	-	-	-	-	-
Ethyl tuads	134	X	Y	-	-	-	-	-	Y
Ethyl tellurac	068	-	Y	-	-	-	X	-	X
Ethyl selenac	129	-	Y	-	Y	-	-	-	Y
Ethyl Zimate	070	X	-	Y	-	-	-	-	-
Ferbam	062	-	-	X	-	-	-	-	-
Avadex	098	-	Y	X	-	-	Y	-	Y
ETU	153	-	Y	-	-	-	-	-	Y
Bis-(2-hydroxyethyl)-dithio-carbamic acid (potassium salt)	170	-	Y	-	-	-	-	-	Y
Vanguard GF	123	-	-	-	Y	-	-	-	-

X: probability = .05 sc = subcutaneous
Y: probability = .01 po = per os (oral)

TABLE XVI (Continued)

STATISTICAL EVALUATION OF TOTAL TUMORS AND THE THREE MOST PREVALENT TUMORS IN ANIMALS RECEIVING EXPERIMENTAL COMPOUNDS

Subcutaneous and Oral Studies

CHEMICAL COMPOUND	COMP. NO.	TOTAL TUMORS		RETICULUM CELL SARCOMA		PULMONARY ADENOMA		HEPATOMA	
		sc	po	sc	po	sc	po	sc	po
Fungicides: Various Structures									
Copper-8-hydroxy-quinoline	118	X	-	Y	-	-	-	-	-
Rodenticides: Various Structures									
Triphenyl tin acetate	148	-	X	-	-	-	-	-	X
Industrial Chemicals Used In Rubber Industry: Accelerators									
Captax	069	-	-	Y	-	-	-	-	-
Zetax	090	-	-	X	-	-	-	-	-
Amax	135	X	-	-	-	-	-	-	-
Industrial Chemicals Used In Rubber Industry: Antioxidants									
Agerite alba	138	X	-	-	-	-	-	-	-
Agerite powder	102	X	-	-	-	-	-	X	Y
Agerite 150	137	-	-	-	-	-	-	-	X
Biphenyl	104	Y	-	-	-	-	-	-	-
p-phenylphenol	116	X	-	Y	-	-	-	-	-
Other Industrial Chemicals and Intermediates of Interest									
Redax	083	-	-	X	-	-	-	-	-
Diphenyl carbonate	113	-	-	-	-	-	-	X	-
Diphenyl acetonitrile	107	X	-	Y	-	-	-	-	-
p-methoxyphenylacetic acid	121	-	X	-	-	-	X	-	-

X: probability = .05
Y: probability = .01

sc = subcutaneous
po = per os (oral)

TABLE XVII
INSECTICIDES: CARBAMATES

Compound Name	Comp. No.	Group (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	Necropsied With (2) Tumor F	Necropsied Without Tumor M	Necropsied Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papillomas M	Gastric Papillomas F	Incidental Lesions M	Incidental Lesions F
Isolan Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Isolan Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Zectran Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Angioma Liver 1 Angioma Spleen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Zectran Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Angioma Liver	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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4-(Dimethylamino)-3, 5-Xylenol Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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4-(Dimethylamino)-3, 5-Xylenol Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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CIPC Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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CIPC Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Angioma Liver	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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I.P.C. Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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I.P.C. Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Sevin Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sevin Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Angioma Spleen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A—[illegible] B—[illegible]
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

TABLE XVIII
INSECTICIDES: DDT TYPE

Compound Name	Group No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Dead, or Cannibalized Before the End of the Study: Lost M	Lost F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	Necropsied With (2) Tumor F	Necropsied Without Tumor M	Necropsied Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumors (2), (3) M	Total Mice With Tumors (2), (3) F	Number of Tumors by Type: Malignant Lymphoma etc. M	Malignant Lymphoma etc. F	Alveolar Cell Tumor M	Alveolar Cell Tumor F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Injection Site Reactions M	Injection Site Reactions F	Residual Lesions M	Residual Lesions F
p,p' - DDT Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p,p' - DDT Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p,p' - DDD Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p,p' - DDD Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o,p' - DDD Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o,p' - DDD Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Perthane Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Perthane Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chlorobenzilate Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chlorobenzilate Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A = B6C3F1; B = B6AKF1

(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.

(3) Excludes papillomas, granulomas and incidental lesions.

TABLE XIX
INSECTICIDES: OTHER CHLORINATED HYDROCARBONS

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	Necropsied With (2) Tumor F	Necropsied Without Tumor M	Necropsied Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	[illegible] M	[illegible] F	[illegible] M	[illegible] F
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thiodan Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible] Spleen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thiodan (2.15 mg/kg) Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thiodan (1.0 mg/kg) Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible] 1 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Renal Adenoma	1 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mirex Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mirex Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible] Liver	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible] Liver	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Telodrin Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible] Spleen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Telodrin Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A—[illegible]
B—[illegible]
(2) Numbers before parentheses represent numbers of mice with tumors; numbers within parentheses, numbers of tumors.
(3) Excludes [illegible]

A

B

TABLE XX
INSECTICIDE SYNERGISTS

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied: With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F
Piperonyl Butoxide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Butoxide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sulfoxide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sulfoxide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Sulfoxide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Sulfoxide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N-Propyl Isome Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N-Propyl Isome Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors by Type: [illegible] M	[illegible] F	[illegible] M	[illegible] F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	[illegible] M	[illegible] F
Piperonyl Butoxide Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Butoxide Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sulfoxide Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sulfoxide Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Sulfoxide Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Piperonyl Sulfoxide Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N-Propyl Isome Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N-Propyl Isome Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice. A—[illegible]
B—[illegible]
(2) Numbers inside parentheses represent numbers of mice with tumors—numbers outside parentheses, numbers of tumors.
(3) [illegible]

A B

TABLE XXI
INSECTICIDES: VARIOUS STRUCTURES

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied: With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Sacrificed at End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (Ex. 3) M	Total Mice With Tumor (Ex. 3) F	Number of Tumors by Type: Malignant Lymphomas with Leukemia M	Malignant Lymphomas with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	[illegible] M	[illegible] F
Bis-(2-Chloroethyl)-Ether ([illegible] mg/kg) [illegible]		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bis-(2-Chloroethyl)-Ether ([illegible] mg/kg) [illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bis-(2-Chloroethyl)-Ether (Oral)		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of Mice: A = [illegible]
B = [illegible]

(2) Numbers before parentheses [illegible]

(3) Excludes papillomas, [illegible] and [illegible] lesions.

TABLE XXII
HERBICIDE: S-TRIAZINES

Compound Name	Code No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Lost, Died, or Cannibalized: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With Tumor F	Without Tumor M	Without Tumor F	Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor M	Total Mice With Tumor F
Atrazine Subcutaneous		A	18	18	1	3	0	0	1(1)	2(2)	0	1	17	15	4(4)	1(1)	13	14	18	18	4(4)	3(3)
	[illegible]	B	18	17	0	2	0	1	0	0	0	0	18	16	0	0	18	16	18	16	0	0
Atrazine Oral		A	18	18	3	0	0	0	3(3)	0	1	0	15	18	4(4)	1(1)	8	17	18	18	6(6)	1(1)
	[illegible]	B	18	18	2	2	0	2	2(2)	1(1)	0	0	17	16	3(3)	2(2)	14	14	18	17	4(4)	3(3)
Propazine Subcutaneous		A	18	18	2	0	1	0	0	0	1	0	16	18	3(3)	1(1)	13	17	17	18	3(3)	1(1)
	[illegible]	B	18	18	1	1	0	0	0	1(1)	1	0	17	17	0	0	17	17	18	18	0	1(1)
Propazine Oral		A	18	18	4	0	1	0	3(3)	0	0	0	14	18	5(5)	1(1)	2	17	17	18	4(4)	1(1)
	[illegible]	B	18	18	2	1	1	1	0	0	1	0	16	17	4(4)	4(4)	12	13	17	17	4(4)	4(4)
Simazine Subcutaneous		A	18	18	0	0	0	0	0	0	0	0	18	18	1(1)	1(1)	17	17	18	18	1(1)	1(1)
	[illegible]	B	18	18	1	0	1	0	0	0	0	0	17	18	1(1)	2(2)	16	16	17	18	1(1)	2(2)
Simazine Oral		A	18	18	4	0	1	0	3(3)	0	1	0	14	18	4(4)	2(2)	10	16	17	18	4(4)	2(2)
	[illegible]	B	18	18	4	1	0	0	3(3)	0	1	1	14	17	4(4)	0	11	17	18	18	6(6)	0

Compound Name	Strain (1)	Malignant Lymphoma with Leukemia M	F	Reticulum-Cell Sarcoma M	F	Pulmonary Adenoma M	F	Pulmonary Carcinoma M	F	Hepatoma M	F	Hepatic Carcinoma with Lung Metastases M	F	Mammary Carcinoma M	F	Other Tumors M	Other Tumors F	Control Papilloma M	F	Incidental Lesions M	F
Atrazine Subcutaneous	A	0	0	1	1	1	1	0	0	2	0	0	0	0	1	1 Angioma	0	0	0	0	2
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1
Atrazine Oral	A	1	0	2	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3
	B	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1 Skin and Soft Tissue	0	0	5	7
Propazine Subcutaneous	A	0	0	2	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	B	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Propazine Oral	A	1	0	2	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	3	3
	B	2	0	0	3	2	3	0	4	2	0	0	0	0	0	0	0	0	0	1	10
Simazine Subcutaneous	A	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	B	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Simazine Oral	A	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1 [illegible]	0	0	0	1	1
	B	0	0	1	0	2	0	0	0	0	0	0	0	0	0	1 Angioma	0	0	0	0	10

(1) Strain of mice: A=[illegible]
B=[illegible]
(2) Numbers before parentheses represent numbers of mice with tumors; numbers within parentheses, numbers of tumors.
(3) [illegible]

TABLE XXIII
HERBICIDES: UREA DERIVATIVES

Compound Name	Group No.	Strain (1)	No. of Mice at Start M	No. of Mice at Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied: With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F
Fenuron TBA Subcutaneous	-	A	18	18	1	3	0	1	0	0	1	1	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	1	2	0	0	0	1(1)	1	1	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fenuron TBA Oral		A	18	18	1	1	1	1	0	0	0	0	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	0	2	0	1	0	1(1)	0	0	18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diuron Subcutaneous		A	18	18	2	0	1	0	0	0	1	0	16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	0	1	0	0	0	1(1)	0	0	18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diuron Oral		A	18	18	1	1	0	0	0	0	1	0	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	1	2	1	1	0	1(1)	0	1	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monuron Subcutaneous		A	18	18	2	4	0	4	2(2)	0	1	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	0	2	0	0	0	1(1)	0	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monuron Oral		A	18	18	3	0	3	0	0	0	0	0	15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	2	1	2	1	0	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethylene thiourea Subcutaneous		A	18	18	3	1	1	0	2(2)	1(1)	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	1	2	0	1	1(1)	0	0	0	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethylene thiourea Oral		A	18	18	4	3	3	3	1(1)	0	2	1	14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	18	18	1	2	0	1	1(1)	1(1)	0	0	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma With Lung Metastases M	Hepatic Carcinoma With Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	Incidental Lesions M	Incidental Lesions F
Fenuron TBA Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	1 [illegible]	0	0	0	11	1
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	1	2	5
Fenuron TBA Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	3	7
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	0	3
Diuron Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	7	4
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	1 [illegible]	1	1	7	5
Diuron Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	1	1 [illegible]	0	0	1	12	10
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	1 [illegible]	0	0	0	4	6
Monuron Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	1 [illegible] ([illegible])	0	0	0	1	3
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	1	0	3	5
Monuron Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	1	6
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	1	0
Ethylene thiourea Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	4	0
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	1 [illegible]	0	0	0	5	3
Ethylene thiourea Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	3	0	4
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	1 [illegible]	0	1	5	1

(1) Strain of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

TABLE XXIV
HERBICIDES: GROWTH REGULATORS

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start M	No. of Mice at Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied: With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastasis M	Hepatic Carcinoma with Lung Metastasis F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	Incidental Lesions M	Incidental Lesions F
Maleic Hydrazide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maleic Hydrazide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-(2-Hydroxyethyl) Hydrazine Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-(2-Hydroxyethyl) Hydrazine Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-Naphthalene Acetamide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-Naphthalene Acetamide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-Naphthalene Acetic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-Naphthalene Acetic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indole-3-Acetic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indole-3-Acetic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of Mice: A-[illegible]
B-[illegible]
(2) Numbers before parentheses represent numbers of mice with tumors; numbers within parentheses, numbers of tumors.
(3) Excluding papillomas, granulomas and incidental lesions.

A

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TABLE XXV
HERBICIDES: GROWTH REGULATORS 2,4-D TYPE

Compound Name	Dosage No.	Strain (1)	No. of Mice at Start		Mice Lost, Died, or Killed Before the End of the Study						Mice Survived to End of Study and Killed						Total Mice Examined		Total Mice with Tumor (2); (3)	
					Total		Non-Neoplastic		Non-Fatal		Total		With (3) Tumor		Without Tumor					
									With (3) Tumor	Without Tumor										
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2,4-D (464 mg/kg) Subcutaneous	040	A	50	50	49	50	49	48	0	0	0	0	0	0	0	0	0	0	0	0
		B	50	50	34	32	34	32	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D (215 mg/kg) Subcutaneous	045	A	50	50	2	1	0	0	1(2)	1(2)	1	0	34	37	2(5)	0	33	33	36	38
		B	50	50	0	0	0	0	0	0	0	0	39	46	0(2)	0	37	38	38	46
2,4-D (100 mg/kg) Oral	042	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		B	50	50	7	6	6	3	0	0(6)	1	1	33	33	1(1)	1(2)	30	32	32	35
2,4-D (40 mg/kg) Oral	043	A	50	50	3	2	1	1	1(3)	0	0	1	38	38	0	0(2)	35	35	35	37
		B	50	50	2	0	0	2	0	0	0	0	48	50	2(2)	2(2)	46	48	48	50
2,4-D Dimethyl Ester Subcutaneous	050	A	50	50	2	0	1	0	0	0	0	0	48	50	0(2)	0(2)	46	48	48	50
		B	50	50	5	0	1	0	0	1(2)	0	0	45	50	0	0(2)	43	48	45	50
2,4-D Isopropyl Ester Oral	049	A	50	50	0	0	0	0	0	0	0	0	50	50	0(2)	0(2)	48	48	50	50
		B	50	50	0	0	0	0	0	0	0	0	50	50	0	0(2)	48	48	50	50
2,4-D Butyl Ester Subcutaneous	051	A	50	50	2	0	0	0	0	0	0	0	48	50	0(2)	0(2)	46	48	48	50
		B	50	50	5	2	0	0	0	2	0	0	45	48	0(2)	0(2)	43	46	45	48
2,4-D Butyl Ester Oral	051	A	50	50	1	1	0	0	0	1(2)	0	0	49	49	0(2)	0(2)	47	47	49	49
		B	50	50	0	0	0	0	0	0	0	0	50	50	0	0(2)	48	48	50	50
2,4-D Isooctyl Ester Subcutaneous	052	A	50	50	5	3	0	0	3(3)	1(2)	0	1	38	39	0(2)	0(2)	33	33	38	39
		B	50	50	6	1	0	1	0	0	0	0	44	49	0(2)	0(2)	39	43	44	49
2,4-D Isooctyl Ester Oral	053	A	50	50	3	2	1	0	0	2(2)	2	0	46	46	0(2)	0(2)	41	41	46	46
		B	50	50	1	0	0	0	0(2)	0(2)	0	0	49	50	0(2)	0(2)	47	47	49	50
α-(2,4-Dichlorophenoxy) -Propionic Acid Subcutaneous	146	A	50	50	4	0	1	0	2(2)	0	2	0	44	48	0(2)	0	41	46	44	48
		B	50	50	1	1	0	0	1(2)	0	0	1	48	48	0(2)	1(2)	45	46	48	48
α-(2,4-Dichlorophenoxy) -Propionic Acid Oral	144	A	50	50	0	0	1	1	0(2)	0	0	2	50	50	0(2)	0	47	48	50	50
		B	50	50	1	0	1	0	0	0	0	0	47	50	0(2)	0(2)	46	48	47	50
2-(2,4-D)Propionic Acid Subcutaneous	147	A	50	50	2	0	0	0	2(2)	0	0	0	48	50	0(2)	0	46	48	48	50
		B	50	50	0	1	0	0	0	1	0	0	50	49	0(2)	0(2)	48	47	50	49
2-(2,4-D)Propionic Acid Oral	145	A	50	50	1	1	1	0	0(2)	0	0	1	48	49	0(2)	0	46	47	48	49
		B	50	50	1	0	0	0	1(2)	0(2)	0	0	48	50	0(2)	0(2)	46	48	48	50
α-(2,4-Dichlorophenoxy) -Propionic Acid Subcutaneous	150	A	50	50	0	0	0	0	0	0	0	0	50	50	0(2)	0(2)	48	48	50	50
		B	50	50	1	1	0	0	0	1(2)	1	0	47	48	0(2)	0(2)	45	46	47	48
α-(2,4-Dichlorophenoxy) -Propionic Acid Oral	148	A	50	50	2	1	1	1	0	0	0	0	48	49	0(2)	0(2)	46	47	48	49
		B	50	50	1	0	1	0	0	0	0	0	48	50	0(2)	0(2)	46	48	48	50
2,4,5-T Subcutaneous	048	A	50	50	1	1	1	0	0(2)	0	0	1	48	48	0(2)	0(2)	46	46	48	48
		B	50	50	1	0	0	0	0	0	1	0	48	50	0(2)	0(2)	46	48	48	50
2,4,5-T Oral	047	A	50	50	2	1	0	0	0	0	0	1	48	49	0(2)	0(2)	46	47	48	49
		B	50	50	2	2	0	0	1(2)	0(2)	1	1	46	48	0(2)	0(2)	44	46	46	48
2-(2,4,5 Trichlorophenoxy) -Propionic Acid Subcutaneous	049	A	50	50	0	0	0	0	0(2)	0	0	0	50	50	0(2)	0	48	48	50	50
		B	50	50	0	0	0	0	0	0	0	0	50	50	0(2)	0(2)	48	48	50	50
2-(2,4,5 Trichlorophenoxy) -Propionic Acid Oral	050	A	50	50	0	0	0	0	0(2)	0	0	0	50	50	0(2)	0	48	48	50	50
		B	50	50	0	0	0	0	0	0	0	0	50	50	0(2)	0(2)	48	48	50	50

(1) Strain of mice: A=C3H/Bi
B=B6AKF1

(2) Numbers before parentheses represent numbers of mice with tumors--numbers within parentheses, numbers of tumors

(3) Excludes papillomas, granulomas and epithelial hyperplasia.

TABLE XXVI
HERBICIDES AND OTHER AGRICULTURAL CHEMICALS

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start		Mice Lost, Died, or Cannibalized Before the End of the Study: Total		Not Necropsied		Necropsied: With (2) Tumor		Necropsied: Without Tumor		Mice Survived to End of Study and Killed: Total		With (2) Tumor		Without Tumor		Total Mice Necropsied		Total Mice With Tumor (2), (3)	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Gibberellic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gibberellic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monochloroacetic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monochloroacetic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCC Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCC Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calcium Cyanamide Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calcium Cyanamide Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenylmercuric Acetate Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenylmercuric Acetate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cacodylic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cacodylic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors By Type: Malignant Lymphomas with Leukemia		Reticulum Cell Sarcoma		Pulmonary Adenoma		Pulmonary Carcinoma		Hepatoma		Hepatic Carcinoma with Lung Metastasis		Mammary Carcinoma		Other Tumors		[illegible]		Incidental Lesions	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Gibberellic Acid Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gibberellic Acid Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monochloroacetic Acid Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monochloroacetic Acid Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCC Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCC Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calcium Cyanamide Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calcium Cyanamide Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenylmercuric Acetate Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenylmercuric Acetate Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cacodylic Acid Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cacodylic Acid Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

A

B

TABLE XXVII
FUNGICIDES/ACARICIDES: CHLORINATED PHENOLS

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start		Mice Lost, Dead, or Cannibalized Before the End of the Study: Total		Not Necropsied		Necropsied: With (2) Tumor		Necropsied: Without Tumor		Mice Survived to End of Study and Killed: Total		With (2) Tumor		Without Tumor		Total Mice Necropsied		Total Mice With Tumor (2)(3)		Number of Tumors By Type: Malignant Lymphoma with Leukemia		Reticulum Cell Sarcoma		Pulmonary Adenoma		Pulmonary Carcinoma		Hepatoma		Hepatic Carcinoma with Lung Metastases		Mammary Carcinoma		Other Tumors		Gastric Papilloma		Incidental Lesions	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2, 3, 4, 6-Tetrachlorophenol Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2, 3, 4, 6-Tetrachlorophenol Oral	[illegible]	A																	No Oral Study																							
		B																	No Oral Study																							
2, 4, [illegible]-[illegible]phenol Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2, 4, 6-Trichlorophenol Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2, 4, 5-Trichlorophenol Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2, 4, 5-Trichlorophenol Oral	[illegible]	A																	No Oral Study																							
		B																	No Oral Study																							
Vancide [illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vancide [illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vancide [illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vancide [illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ovex Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ovex Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Genite - [illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Genite - [illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice A – [illegible]
B – [illegible]

(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.

(3) Excludes papillomas, granulomas and incidental lesions.

A B

TABLE XXVIII
FUNGICIDES: NITROBENZENE DERIVATIVES

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors By Type: Malignant Lymphomas with Leukemias M	Malignant Lymphomas F	Reticulum Cell Sarcomas M	Reticulum Cell Sarcomas F	Pulmonary Adenomas M	Pulmonary Adenomas F	Pulmonary Carcinomas M	Pulmonary Carcinomas F	Hepatomas M	Hepatomas F	Hepatic Carcinomas with Lung Metastases M	Hepatic Carcinomas F	[illegible] Carcinomas M	[illegible] Carcinomas F	Other Tumors M	Other Tumors F	Gastric Papillomas M	Gastric Papillomas F	[illegible] Lesions M	[illegible] Lesions F
Karathane Subcutaneous		A	18	18	6	5	0	0	3(3)	0	3	5	12	13	3(3)	1(1)	12	12	18	18	5(6)	1(1)	0	0	1	0	0	0	0	0	3	1	0	0	0	0	1 [illegible]	0	0	0	1	2
	484	B	18	18	5	2	0	0	3(3)	0	0	2	16	16	1(1)	5(6)	13	11	18	18	4(4)	5(6)	0	0	3	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Karathane Oral		A	18	18	4	4	1	3	3(3)	2(2)	1	1	14	14	4(5)	0	11	13	17	17	3(3)	2(2)	0	0	3	2	0	0	0	0	1	1	0	0	0	0	1 Angioma Spleen	0	0	0	5	11
	486	B	18	18	4	3	1	1	0	0	4	2	13	13	3(4)	0	10	13	17	17	3(4)	0	0	0	0	0	2	0	0	0	2	0	0	3	0	0	0	0	0	0	5	10
2-Sec-Butyl-4,6-Dinitrophenol Subcutaneous		A	18	18	3	0	0	0	3(3)	0	0	0	15	18	4(4)	0	11	18	18	18	7(8)	0	0	0	3	0	2	0	0	0	3	0	0	0	0	0	1 [illegible]	0	0	0	3	2
	191	B	18	18	4	1	0	0	0	0	0	1	14	17	1(2)	0	17	17	18	18	1(2)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
2-Sec-Butyl-4,6-Dinitrophenol Oral		A	18	18	0	0	0	0	0	0	0	0	18	18	7(8)	1(1)	11	17	18	18	7(8)	1(1)	0	0	3	0	3	1	0	0	1	0	0	0	0	0	3 Angioma Liver	0	0	2	4	4
	192	B	18	18	1	4	1	1	0	2(2)	0	1	17	14	6(6)	0	11	14	17	17	6(6)	2(2)	0	0	1	1	4	1	0	0	1	0	0	0	0	0	0	0	0	0	7	2
Botran Subcutaneous		A	18	18	4	4	1	0	2(3)	0	1	0	14	14	0	0	14	16	17	18	2(3)	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	493	B	18	18	1	2	1	0	0	3(3)	0	0	17	16	1(1)	1(1)	4	14	17	16	1(1)	4(4)	0	3	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7
Botran Oral		A	18	18	1	1	1	1	1(1)	0	0	0	17	17	2(3)	4(4)	15	13	18	17	3(4)	4(4)	0	0	1	0	1	1	0	0	1	0	0	0	0	1	1 Angioma Liver	1 Adenoma Adrenal Cortex; 1 Lymphangiosarcoma [illegible]	0	0	2	1
	493	B	18	18	2	1	0	1	0	0	2	0	16	17	3(3)	0	15	17	18	17	3(3)	0	0	0	0	0	1	0	0	0	2	0	0	6	0	0	0	0	0	1	3	2
2,4 Dichloro-6 Nitroaniline Subcutaneous		A	18	18	3	3	2	0	2(2)	0	0	3	15	16	4(4)	0	9	16	18	18	7(7)	0	0	0	3	0	2	0	0	2	2	0	0	0	0	0	1 Angioma Liver	0	0	0	12	2
	193	B	18	18	0	0	0	0	0	0	0	0	18	18	1(1)	0	17	18	18	18	1(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 Malignant Lymphoma	0	0	0	0	0
2,4 Dichloro-6 Nitroaniline Oral		A	18	18	2	2	0	1	2(2)	0	1	1	16	16	6(6)	3(3)	9	13	18	17	8(8)	3(3)	0	0	1	3	1	1	0	0	1	0	0	0	0	0	1 [illegible]; 1 Angioma Liver	0	0	1	0	3
	194	B	18	18	0	2	0	0	0	2(2)	0	0	18	16	1(1)	2(2)	17	14	18	18	8(8)	2(2)	0	0	0	2	0	1	0	0	0	0	0	0	0	0	1 Angioma Spleen	2 Lymphangioma*	0	0	1	1
Vancide PB Subcutaneous		A	18	18	7	2	0	1	4(4)	0	3	1	11	16	4(5)	0	7	16	18	17	4(4)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1 [illegible] Spleen	0	0	0	0	0
	481	B	18	18	0	1	0	0	0	1(1)	0	0	18	17	3(3)	3(3)	15	14	18	18	3(3)	4(4)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Vancide PB Oral		A	18	18	7	2	3	0	2(2)	1(1)	2	0	11	16	5(5)	0	6	16	18	18	7(7)	1(1)	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
	485	B	18	18	1	0	1	0	0	0	1	0	17	18	2(2)	2(2)	15	16	18	18	2(2)	2(2)	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
PCNB Subcutaneous		A	18	18	2	1	1	0	0	0	1	1	16	17	4(4)	3(4)	12	13	17	18	4(4)	3(4)	0	0	1	0	1	2	0	1	0	0	0	0	0	0	1 Angioma Spleen	0	0	0	3	3
	480	B	18	18	0	0	0	0	0	1(1)	0	0	18	18	1(1)	1(1)	17	17	18	18	1(1)	2(2)	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1 Adenoma [illegible]	0	0	7	2
PCNB Oral		A	18	18	4	0	0	0	1(1)	0	3	0	14	18	4(4)	5(5)	10	13	18	18	5(5)	5(5)	1	0	1	0	4	1	0	0	2	1	0	0	0	0	0	0	0	0	10	16
	486	B	18	18	2	1	1	1	0	0	1	0	16	17	11(13)	2(2)	5	15	17	17	11(13)	2(2)	0	0	2	1	1	0	0	0	1	1	0	3	0	0	1 [illegible]	0	0	0	16	14

(1) Strain of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.
*Mouse with metastases

TABLE XXIX
FUNGICIDES: QUINONES

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start M	No. of Mice at Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	Necropsied With (2) Tumor F	Necropsied Without Tumor M	Necropsied Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F
Chloranil Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chloranil Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dichlone Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dichlone Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Anthraquinone Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors By Type: [illegible] M	[illegible] F	[illegible] M	[illegible] F	[illegible] M	[illegible] F	[illegible] M	[illegible] F	[illegible] M	[illegible] F	[illegible] M	[illegible] F	[illegible] M	[illegible] F	Other Tumors M	Other Tumors F	[illegible] M	[illegible] F	[illegible] M	[illegible] F
Chloranil Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chloranil Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dichlone Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dichlone Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Anthraquinone Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strains of Mice: A. = [illegible]F1
B. = B6AKF1
(2) [illegible]
(3) [illegible]
*[illegible]

TABLE XXX
FUNGICIDES: THIOPHTHALIMIDES

Compound Name	Comp No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied: With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors By Type: Malignant Lymphoma with Leukemia M	F	Reticulum Cell Sarcoma M	F	Pulmonary Adenoma M	F	Pulmonary Carcinoma M	F	Hepatoma M	F	Hepatic Carcinoma With Lung Metastases M	F	Mammary Carcinoma M	F	Other Tumors M	Other Tumors F	[illegible] Papilloma M	F	[illegible] M	F
Folpet Subcutaneous		A	18	18	3	0	2	0	0	0	1	0	15	18	1(1)	0	14	18	16	18	1(1)	0	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	[illegible]	B	18	18	1	2	0	2	0	0	1	0	17	16	0	2(2)	17	14	18	16	0	2(2)	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1 Lipoma	0	0	0	0
Folpet Oral		A	18	18	0	1	0	0	0	4(1)	0	0	18	17	6(6)	3(3)	12	14	18	18	6(6)	3(3)	0	0	0	2	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	3
	[illegible]	B	18	18	2	5	1	0	1(1)	1(1)	0	4	16	13	4(4)	0	12	13	17	18	5(5)	1(1)	0	0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	0	0	2	4
Captan Subcutaneous		A	18	16	3	1	1	0	2(2)	1(1)	0	0	15	15	4(4)	2(2)	11	13	17	16	6(6)	3(3)	0	0	2	1	1	0	1	0	1	0	0	0	0	1	1 [illegible]	1 [illegible]	0	0	2	2
	[illegible]	B	18	18	2	1	1	0	1	1(1)	0	0	16	17	0	2(2)	16	15	17	18	0	3(3)	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Captan Oral		A	18	18	3	3	3	0	1(1)	3(3)	2	1	12	15	6(6)	0	6	15	15	18	7(7)	3(3)	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	[illegible]	B	18	18	2	2	1	0	1(1)	0	0	2	16	16	4(4)	1(1)	12	15	17	17	5(5)	1(1)	0	0	1	1	2	0	0	0	2	0	0	0	0	0	0	1 [illegible]	0	0	1	2

(1) Strain of mice A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors — numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

TABLE XXXI
FUNGICIDES: DITHIOCARBAMATE COMPOUNDS

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start		Mice Lost, Died, or Cannibalized Before the End of the Study: Total		Not Necropsied		Necropsied: With (2) Tumor		Necropsied: Without Tumor		Mice Survived to End of Study and Killed: Total		With (2) Tumor		Without Tumor		Total Mice Necropsied		Total Mice With Tumors (2) (3)		Number of Tumors by Type: Malignant Lymphoma		Reticulum Cell Sarcoma		Pulmonary Adenoma		Pulmonary Carcinoma		Hepatoma		Hepatic Carcinoma with Lung Metastases		Mammary Carcinoma		Other Tumors		Gastric Papilloma		Incidental Lesions	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Nabam Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nabam Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SDDC Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SDDC Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bis-(2-Hydroxyethyl)-Dithiocarbamic Acid (Potassium Salt) Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bis-(2-Hydroxyethyl)-Dithiocarbamic Acid (Potassium Salt) Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vangard GF Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vangard GF Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ferbam Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ferbam Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vangard K Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vangard K Oral (46.4 mg/kg)		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	-	-																																						
Vangard K Oral ([illegible] mg/kg)		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Tellurac Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Tellurac Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Cadmate Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Cadmate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A—[illegible] B—[illegible]
(2) [illegible]
(3) [illegible]

TABLE XXXI

FUNGICIDES: DITHIOCARBAMATE COMPOUNDS (Continued)

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Dead, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	Necropsied With (2) Tumor F	Necropsied Without Tumor M	Necropsied Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice (Necropsied) M	Total Mice (Necropsied) F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastases M	Hepatic Carcinoma with Lung Metastases F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	Incidental Lesions M	Incidental Lesions F
Ledate Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ledate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Giant Cell Bone Tumor	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methyl Selenac Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 Angioma Spleen	1 Angioma Spleen	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methyl Selenac Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Selenac Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Selenac Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bismate Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Bismate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Butyl Zimate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Zimate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methyl Zimate Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methyl Zimate Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zineb Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zineb Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maneb Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maneb Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

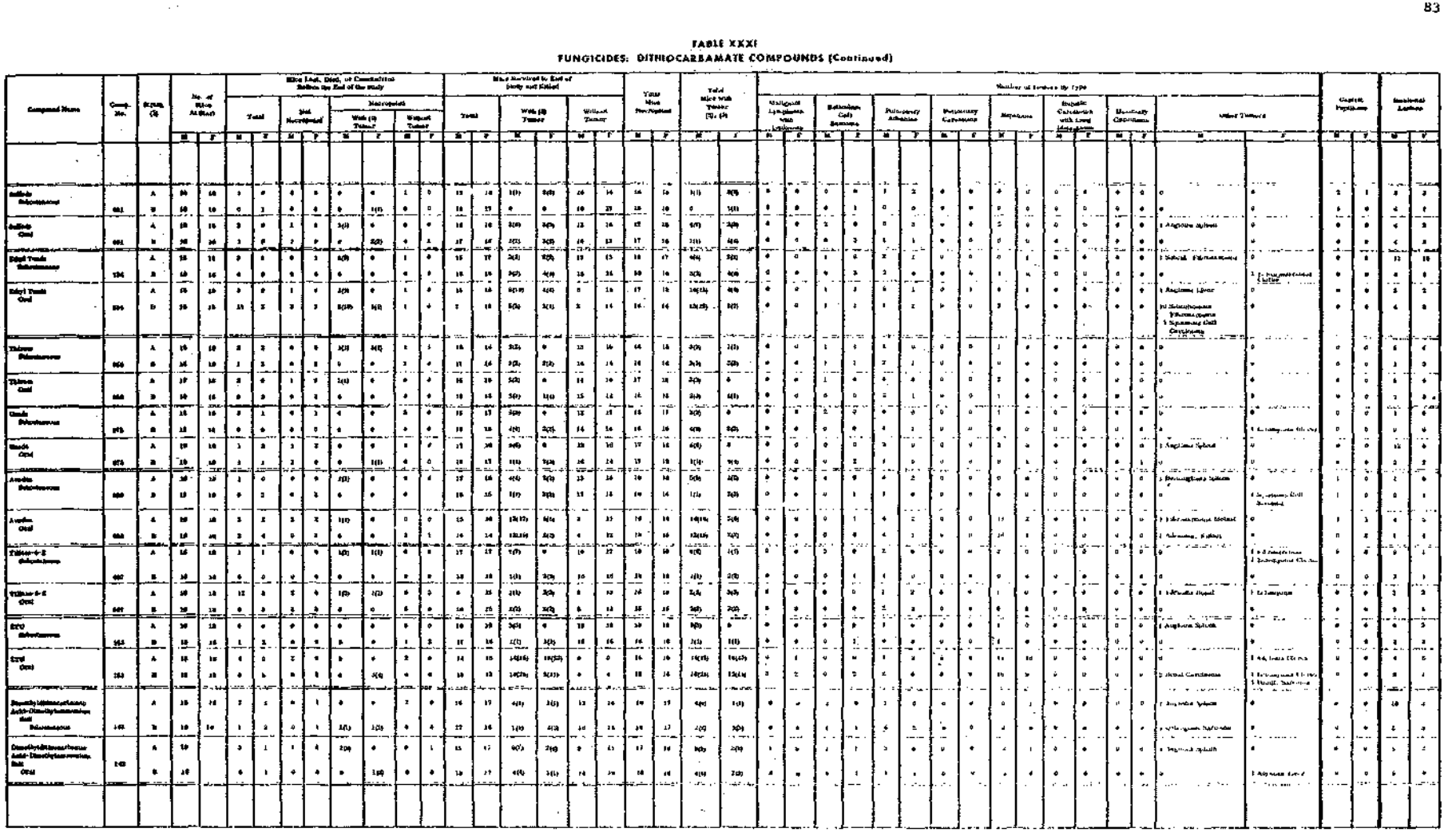
(1) Strain of mice: A=B6C3F1; B=B6AKF1

(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.

(3) Excludes papillomas, granulomas and incidental lesions.

TABLE XXXI

FUNGICIDES: DITHIOCARBAMATE COMPOUNDS (Continued)



(a) Sexes of mice: A—[illegible]
B—[illegible]

(b) Numbers below the compound represent numbers of mice with tumors—numerator = Mice necropsied, numerator = all mice

(c) Excludes hepatomas, pheochromas and incidental tumors.

TABLE XXXII
FUNGICIDE: VARIOUS STRUCTURES

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start M	No. of Mice at Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors by Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma with Lung Metastasis M	Hepatic Carcinoma with Lung Metastasis F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	Gastric Papilloma M	Gastric Papilloma F	Incidental Lesions M	Incidental Lesions F
[illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dodine Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dehydroacetic Acid Subcutaneous		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dehydroacetic Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Acid [illegible]		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Acid Oral		A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A=[illegible]F1
B=[illegible]F1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

A

B

TABLE XXXIII
RODENTICIDES: VARIOUS STRUCTURES

Compound Name	Compd. No.	Strain (1)	No. of Mice At Start		Mice Lost, Died, or Cannibalized Before the End of the Study								Mice Survived to End of Study and Killed						Total Mice Necropsied		Total Mice With Tumor (2), (3)		Number of Tumors by Type																Gastric Papilloma		Incidental Lesions	
					Total		Not Necropsied		Necropsied: With (2) Tumor		Necropsied: Without Tumor		Total		With (2) Tumor		Without Tumor						Malignant Lymphoma with Leukemia		Reticulum Cell Sarcoma		Pulmonary Adenoma		Pulmonary Carcinoma		Hepatoma		[illegible] Carcinoma with Local Metastasis		[illegible] Carcinoma		Other Tumors					
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Triphenyl Tin [illegible] Subcutaneous		A	18	18	4	0	3	0	1(1)	0	[illegible]	0	13	18	0	1(1)	13	17	16	18	1(1)	1(1)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1 [illegible]	0	0	5	4
	143	B	18	16	0	1	0	0	0	0	0	1	18	15	1(1)	3(3)	17	15	18	15	3(3)	2(3)	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4	2
Triphenyl Tin Acetate Oral		A	18	18	3	3	1	1	2(3)	0	0	2	16	16	1(1)	1(1)	15	15	17	17	1(1)	1(1)	0	0	1	0	3	2	0	0	0	1	0	0	0	4	0	0	0	0	11	3
	144	B	18	18	2	2	1	0	0	1(1)	1	0	16	17	5(5)	3(3)	11	14	17	18	5(5)	4(4)	0	0	0	1	1	2	0	0	4	0	0	0	0	1	0	2 [illegible]	0	1	0	2
Antu Subcutaneous		A	18	18	2	0	0	0	1(1)	0	1	0	16	18	7(9)	1(1)	11	17	18	18	8(8)	1(1)	0	0	5	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	7	6
	145	B	18	18	1	2	1	1	0	1(1)	0	1	17	16	3(3)	0	14	15	17	17	3(3)	1(1)	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2 [illegible]	0	0	4	5
Antu Oral		A	18	18	4	1	3	0	2(3)	1(1)	0	0	14	17	4(4)	0	10	17	16	18	6(6)	1(1)	0	0	4	0	7	0	0	0	0	0	0	0	0	0	2 [illegible]	1 [illegible]	0	0	5	5
	146	B	18	18	1	0	0	0	0	0	1	0	17	18	2(2)	1(1)	15	17	18	18	3(3)	1(1)	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1 [illegible]	0	0	0	1	2
α-Chloralose Subcutaneous		A	18	18	1	1	0	0	0	1(1)	1	0	17	17	4(4)	1(1)	13	16	18	18	4(4)	2(2)	0	0	0	0	2	1	0	0	1	0	0	0	0	1	1 [illegible]	0	0	0	4	3
	139	B	18	18	0	1	0	1	0	0	0	0	18	17	2(2)	2(2)	16	14	18	17	2(2)	2(2)	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3
α-Chloralose Oral		A	18	18	1	1	0	1	0	0	1	0	18	17	5(5)	0	13	17	18	17	5(5)	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	1	3	3	0
	140	B	18	18	0	2	0	2	0	0	0	0	18	16	2(2)	3(3)	16	13	18	16	2(2)	3(3)	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0

(1) Strain of mice: A=B6C3F1
B=B6AKF1
(2) Numbers in two parentheses represent numbers of mice with tumors; numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and incidental lesions.

A

B

TABLE XXXIV
INDUSTRIAL CHEMICALS USED IN RUBBER INDUSTRY: ACCELERATORS

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	No. of Mice At Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (3) Tumor M	With (3) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (3) Tumor M	With (3) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F	Number of Tumors By Type: Malignant Lymphoma with Leukemia M	Malignant Lymphoma with Leukemia F	Reticulum Cell Sarcoma M	Reticulum Cell Sarcoma F	Pulmonary Adenoma M	Pulmonary Adenoma F	Pulmonary Carcinoma M	Pulmonary Carcinoma F	Hepatoma M	Hepatoma F	Hepatic Carcinoma and Lung Metastasis M	Hepatic Carcinoma and Lung Metastasis F	Mammary Carcinoma M	Mammary Carcinoma F	Other Tumors M	Other Tumors F	[illegible] M	[illegible] F	[illegible] M	[illegible] F
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Altax Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Oral	[illegible]	A	No Oral Study																																							
		B																																								
Captax Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Captax Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenyl [illegible] Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenyl [illegible] Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strain of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—Numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and epidermal lesions.

A

B

TABLE XXXV

INDUSTRIAL CHEMICALS USED IN RUBBER INDUSTRY: ANTIOXIDANTS

Compound Name	Comp. No.	Strain (1)	No. of Mice at Start M	No. of Mice at Start F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	Total F	Not Necropsied M	Not Necropsied F	Necropsied With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Mice Survived to End of Study and Killed: Total M	Total F	With (2) Tumor M	With (2) Tumor F	Without Tumor M	Without Tumor F	Total Mice Necropsied M	Total Mice Necropsied F	Total Mice With Tumor (2), (3) M	Total Mice With Tumor (2), (3) F
Agerite White Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite White Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite DPPD Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite DPPD Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite 150 Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite 150 Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Powder Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Powder Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biphenyl Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biphenyl Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Alba Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Alba Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p-Phenylphenol Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p-Phenylphenol Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o-Phenylphenol Subcutaneous	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o-Phenylphenol Oral	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compound Name	Strain (1)	Number of Tumors by Type: Malignant Lymphomas with Leukemia M	F	Reticulum Cell Sarcoma M	F	Pulmonary Adenoma M	F	Pulmonary Carcinoma M	F	Hepatomas M	F	Hepatic Carcinoma with Lung Metastasis M	F	Mammary Carcinoma M	F	Other Tumors M	Other Tumors F	Gross Papillomas M	F	Localized Lesions M	F
Agerite White Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite White Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite DPPD Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite DPPD Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite 150 Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite 150 Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Powder Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Powder Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biphenyl Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biphenyl Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Alba Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agerite Alba Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p-Phenylphenol Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p-Phenylphenol Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o-Phenylphenol Subcutaneous	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
o-Phenylphenol Oral	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Strains of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors.
(3) Excludes papillomas, granulomas and localized lesions.

A

B

TABLE XXXVI
OTHER INDUSTRIAL CHEMICALS AND INTERMEDIATES OF INTEREST

Compound Name	Comp. No.	Strain (1)	No. of Mice At Start M	F	Mice Lost, Died, or Cannibalized Before the End of the Study: Total M	F	Not Necropsied M	F	Necropsied With (2) Tumor M	F	Necropsied Without Tumor M	F	Mice Survived to End of Study and Killed: Total M	F	With (2) Tumor M	F	Without Tumor M	F	Total Mice Necropsied M	F	Total Mice With Tumor (2), (3) M	F
Diphenyl [illegible] Subcutaneous		A	18	18	5	1	0	3	3(3)	1(1)	2	1	13	14	2(2)	2(2)	11	12	18	16	5(5)	3(3)
	108	B	18	18	0	1	0	1	0	0	0	1	18	18	3(3)	3(3)	15	12	18	17	3(3)	3(3)
Diphenyl [illegible] Oral		A	18	18	6	2	2	1	1(1)	1(1)	2	0	12	16	4(4)	2(2)	8	14	18	17	4(7)	3(3)
	107	B	18	18	1	0	1	0	0	0	0	0	17	18	2(2)	2(2)	15	16	17	18	2(2)	2(2)
Diphenyl Carbonate Subcutaneous		A	18	18	2	1	1	1	1(1)	0	0	0	16	17	3(3)	3(3)	13	14	18	17	4(4)	3(3)
	110	B	18	18	1	0	0	0	1(1)	0	0	0	17	18	1(1)	0	16	18	18	18	2(2)	0
Diphenyl Carbonate Oral		A	18	18	1	3	0	0	1(1)	2(2)	0	3	17	15	4(4)	2(2)	13	13	18	16	2(2)	3(3)
	112	B	18	18	3	1	2	1	0	0	1	0	15	17	1(1)	2(2)	14	15	18	17	1(1)	2(2)
[illegible] Subcutaneous		A	18	18	3	3	0	0	3(3)	1(1)	0	2	15	15	4(4)	0	11	15	18	18	5(6)	1(1)
	140	B	18	18	2	2	0	1	2(2)	1(1)	0	0	16	16	0	1(1)	16	15	18	17	1(1)	2(2)
[illegible] Oral		A	18	18	4	5	2	3	2(2)	0	0	2	14	13	5(8)	4(4)	9	9	16	15	7(8)	4(4)
	166	B	18	18	0	2	0	0	0	0	0	2	18	16	3(3)	1(1)	15	15	18	16	3(3)	1(1)
p-[illegible]phenylacetic Acid Subcutaneous		A	18	18	1	1	0	1	1(1)	0	0	0	17	17	1(1)	2(2)	16	15	18	17	2(2)	2(2)
	182	B	18	18	1	1	1	0	0	1(1)	0	0	17	17	0	0	17	17	17	18	0	1(1)
p-[illegible]phenylacetic Acid Oral		A	18	16	2	0	0	0	2(2)	0	0	0	16	16	2(2)	3(3)	14	13	18	16	4(4)	3(3)
	128	B	18	16	2	0	2	0	0	0	0	0	16	16	2(2)	4(4)	14	12	16	16	2(2)	4(4)

Compound Name	Strain	Incidence of Tumors by Type: Malignant Lymphoma with Leukemia M	F	Reticulum Cell Sarcoma M	F	Pulmonary Adenoma M	F	Pulmonary Carcinoma M	F	Hepatoma M	F	Hepatic Carcinoma with Lung Metastasis M	F	Mammary Carcinoma M	F	Other Tumors M	F	Gastric Papilloma M	F	Incidental Lesions M	F
Diphenyl [illegible] Subcutaneous	A	0	0	2	2	1	1	0	0	0	0	0	0	0	0	1 Angioma Liver	0	0	1	12	1
	B	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	1 [illegible]	0	0	10	0
Diphenyl [illegible] Oral	A	0	0	1	0	3	1	0	0	1	0	0	0	0	1	1 Angioma Spleen	1 [illegible]	0	0	4	3
	B	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	2
Diphenyl Carbonate Subcutaneous	A	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	7	3
	B	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Diphenyl Carbonate Oral	A	0	0	1	0	1	1	0	0	3	0	0	0	0	1	1 Angioma Spleen	1 [illegible]	0	0	3	3
	B	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1
[illegible] Subcutaneous	A	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0
	B	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1 [illegible]	0	0	0	0
[illegible] Oral	A	0	0	1	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	B	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0
p-[illegible]phenylacetic Acid Subcutaneous	A	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	4	0
	B	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
p-[illegible]phenylacetic Acid Oral	A	0	0	2	0	0	1	0	0	2	0	0	0	0	0	1 Angioma Spleen	1 Angioma Spleen	1	1	6	1
	B	0	0	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	2	1

(1) Strain of mice: A—B6C3F1
B—B6AKF1
(2) Numbers before parentheses represent numbers of mice with tumors—numbers within parentheses, numbers of tumors
(3) Excluded papillomas, granulomas and incidental lesions.

A

B

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CARCINOGENESIS ASSAY SUMMARY SHEETS

CONTRACT PH 43-67-735

The following summary sheets present the details of pathologic findings by strain and sex of each group of animals, both control and experimental. They are in the same order as the summary tables.

EXPERIMENTAL COMPOUNDS STUDIED

CLASSIFICATION	COMPOUND NUMBERS
VARIOUS CHEMICAL COMPOUNDS USED AS POSITIVE CONTROLS	034,089,078,122,160,161,162
INSECTICIDES: CARBAMATES	152,149,167,150,048,047
INSECTICIDES: DDT TYPE	065,067,052,072,168
INSECTICIDES: OTHER CHLORINATED HYDROCARBONS	171,169,096,159
INSECTICIDES: SYNERGISTS	027,092,028,029
INSECTICIDES: VARIOUS STRUCTURES	109,103,139
HERBICIDES: S-TRIAZINES	066,025,024
HERBICIDES: UREA DERIVATIVES	085,053,059,157
HERBICIDES: GROWTH REGULATORS	057,154,110,077,112,108,166
HERBICIDES: GROWTH REGULATORS 2,4-D TYPE	063,030,031,032,146,151,145, 061,095
HERBICIDES AND OTHER AGRICULTURAL CHEMICALS	142,114,156,124,120,115
FUNGICIDES/ACARICIDES: CHLORINATED PHENOLS	050,084,097,144,141,127,158, 147,165
FUNGICIDES: NITROBENZENE DERIVATIVES	094,101,093,128,081,060
FUNGICIDES: QUINONES	073,076,105
FUNGICIDES: THIOPHTHALIMIDES	086,026
FUNGICIDES: DITHIOCARBAMATES COMPOUNDS	079,049,170,123,062,140,068,099, 136,088,133,129,082,125,070,132, 051,056,143,091,134,058,075,098, 087,153
FUNGICIDES: VARIOUS STRUCTURES	054,111,118,100
RODENTICIDES: VARIOUS STRUCTURES	148,106,119
INDUSTRIAL CHEMICALS USED IN RUBBER INDUSTRY: ACCELERATORS	135,131,090,074,126,069,071

EXPERIMENTAL COMPOUNDS STUDIED (CONTINUED)

CLASSIFICATION	COMPOUND NUMBERS
INDUSTRIAL CHEMICALS USED IN RUBBER INDUSTRY: ANTIOXIDANTS	130,080,137,102,104,138,116,117
OTHER INDUSTRIAL CHEMICALS AND INTERMEDIATES OF INTEREST	107,113,083,121

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Neg. 0 (A) Date Killed 10-6-66

Compound No. -- Date Completed 4-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	18
No. mice missing (no necropsy or tissue missing)	1	1	1	0
No. mice died during experiment	1	0	0	0
No. mice negative (killed and died)	10	12	12	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	2	2
No. mice killed or died, other diseases	6	4	3	6
Tumors				
Lymphatic Leukemia	0	0	0	1
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyosarcoma	0	0	1	0
Total Number of Tumors	1	1	2	2
Common other Lesions				
Follicular hyperplasia, spleen	3	1	0	1
Lymphoid infiltration	1	1	0	3
Pneumonitis	4	4	3	4

Signed: J R M Innes
Dr. J.R.M. Innes

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Negative Control - O, B Date Killed 11-1-66

Compound No. 84 Date Completed 5-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	16	16
No. mice missing (no necropsy or tissue missing)	1	0	1	1
No. mice died during experiment	3	1	2	2
No. mice negative (killed and died)	11	7	11	10
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	3	1	0	3
No. mice killed or died, other diseases	3	9	6	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1			
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma		1	0	0
Carcinoma, skin	0	0	0	0
Other types Fibrosarcoma, mammary gland	0	1	0	0
Total Number of Tumors	3	2	0	3
Common other Lesions				
Pneumonitis	2	1	6	3
Lymphocytic infiltration, kidneys	1	3	0	2
Lymphocytic infiltration, liver	0	2	0	0
Lymphocytic infiltration, lungs	0	1	0	1
Hydrometra	0	6	0	1

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Signed: Marion G. Valerio

Marion G. Valerio, D.V.M.

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Negative Control O, C Date Killed 8-18-66

Compound No. _____ Date Completed 5-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	17	17
No. mice missing (no necropsy or tissue missing)	1	2	1	0
No. mice died during experiment	3	1	1	1
No. mice negative (killed and died)	10	13	11	11
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	0	2	3
No. mice killed or died, other diseases	4	3	4	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	0	1	0
Total Number of Tumors	3	0	3	3
Common other Lesions				
Lymphocytic infiltration, liver	1	0	0	1
Aspiration pneumonia	3	2	4	3
Cystic ovary	0	1	0	0

Signed: Marion G. Valerio

Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Negative Control I Date Killed 7-28-66

Compound No. -- Date Completed 3-30-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	6	8	8	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	6	3	1	1
No. mice killed or died, other diseases	6	7	9	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	1	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	1	0	0
Angioma, spleen	0	1	0	0
Teratoma, ovary	0	1	0	0
Total Number of Tumors	7	3	0	1
Common other Lesions				
Pneumonitis	5	2	5	3
Pulmonary edema	2	0	2	0
Lymphoid infiltration	0	5	0	1
Cystic endometritis	0	2	0	0
Lymphoid hyperplasia	0	0	0	2
Granuloma with squamous cell metaplasia (renal pelvis)	0	0	1	0

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Signed: Dr. J. R. M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Negative Control II Date Killed 7-28-66

Compound No. -- Date Completed 4-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	12	18	18	18
No. mice surviving 18 months	12	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	10	8	15	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	2	0	2
No. mice killed or died, other diseases	0	8	3	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Lipoma - vulva	0	0	0	1
Total Number of Tumors	2	2	0	2
Common other Lesions				
Pneumonitis	0	2	2	4
Dilated lymphatics	0	2	0	0
Lymphoid infiltration	0	0	0	4
Dilated seminal vesicles	0	0	1	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Negative Control III Date Killed 7-28-66

Compound No. -- Date Completed 4-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start				
No. mice surviving 18 months	0	4	11	6
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	0	3	9	3
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	0	0	0	1
No. mice killed or died, other diseases	0	1	2	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	0	0	0	1
Common other Lesions				
Pneumonitis	0	1	2	0
Lymphoid infiltrate, lung	0	0	0	1
Follicular hyperplasia	0	0	0	1

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Signed: [signature] for
Dr. J. R. M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/835

Compound Name Gel. Control Date Killed 10-6-66

Compound No. -- Subcutaneous Date Completed 6-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	11	14	11	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	3	0	1	1
No. mice killed or died, other diseases	3	4	6	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	0	1	1
Common other Lesions				
Follicular hyperplasia, spleen	1	0	0	0
Aspiration pneumonia	1	3	6	4
Lymphocytic infiltration lungs, liver, and kidney	1	1	0	1

Signed: Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/861

Compound Name Corn Oil (Subcutaneous) Date Killed 7-19-66

Compound No. CO-Z Date Completed 8-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	24	24	24	24
No. mice surviving 18 months	17	21	16	19
No. mice missing (no necropsy or tissue missing)	2	1	5	4
No. mice died during experiment	5	2	3	1
No. mice negative (killed and died)	12	20	15	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	8	1	2	2
No. mice killed or died, other diseases	4	2	2	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, subcutaneous	1	0	0	0
Angioma, spleen	1	0	0	1
Papilloma, stomach	1	0	0	1
Angioma, liver	1	0	0	0
Total Number of Tumors	11	1	2	3
Common other Lesions Arteritis, cardiac vessels	1	0	0	0
Focal pneumonia	1	0	0	2
Follicular hyperplasia, spleen	2	1	2	1
Lymphoid infiltrate, lung	1	1	2	3
Lymphoid infiltrate, kidney 0	0	1	0	0
Cystic kidney	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/862

Compound Name DMSO - Control Date Killed 7-19-66

Compound No. (Dimethyl sulfoxide), Subcutaneous Date Completed 11-29-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	24	24	24	24
No. mice surviving 18 months	23	23	22	24
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	1	0	2	0
No. mice negative (killed and died)	17	19	20	14
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	1	1	3
No. mice killed or died, other diseases	5	3	3	7
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	2	1	1	3
Common other Lesions				
Focal pneumonia	4	2	3	4
Cystic seminal vesicles	1	0	0	0
Lymphoid depletion (spleen)	1	0	0	0
Lymphoid infiltration	0	1	0	2
Lymphoid nodule, liver	0	0	0	1
Mesenteric granuloma	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/831

Compound Name Neg-O D Date Killed 2-2-67

Compound No. _____ (Oral) Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	16	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	2	0	2
No. mice negative (killed and died)	7	5	11	11
No. mice died with tumors	2	1	0	0
No. mice killed with tumors	4	6	5	2
No. mice killed or died, other diseases	6	9	5	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	2	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	2	0	0	0
Papilloma, stomach	0	5	0	0
Total Number of Tumors	6	8	6	2
Common other Lesions				
Focal pneumonia	5	3	3	3
Focal hyperkeratosis, stomach	1	5	0	0
Follicular hyperplasia, spleen	2	5	0	1
Myocarditis	1	0	0	0
Chronic nephritis	1	0	0	0
Lymphoid infiltration, lung	0	2	1	1
Cystic kidney	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/833

Compound Name Neg-O F Date Killed 12-15-66

Compound No. -- (Oral) Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	0	0	1
No. mice negative (killed and died)	8	12	7	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	2	2	0
No. mice killed or died, other diseases	7	4	10	9
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	0	0	0
Adreno-cortical adenoma	0	0	1	0
Total Number of Tumors	6	2	2	0
Common other Lesions Follicular hyperplasia, spleen	4	0	1	2
Lymphoid infiltration, lung	3	2	1	5
Focal pneumonia, lung	1	1	10	2
Focal hyperkeratosis, stomach	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/833

Compound Name Neg-O F Date Killed 12-15-66

Compound No. -- (Oral) Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	0	0	1
No. mice negative (killed and died)	8	12	7	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	2	2	0
No. mice killed or died, other diseases	7	4	10	9
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Adreno-cortical adenoma	0	0	1	0
Total Number of Tumors	6	2	2	0
Common other Lesions				
Follicular hyperplasia, spleen	4	0	1	2
Lymphoid infiltration, lung	3	2	1	5
Focal pneumonia, lung	1	1	10	2
Focal hyperkeratosis, stomach	0	1	0	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/834

Compound Name Neg "O" Room 43 Date Killed 5-24-67

Compound No. Neg "O" (Oral) Date Completed 11-6-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	14
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	2	1	4
No. mice negative (killed and died)	4	4	10	16
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	8	11	3	2
No. mice killed or died, other diseases	6	2	5	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	2
Pulmonary Carcinoma	0	0	1	0
Hepatoma	1	0	0	1
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Gastric papilloma	3	11	0	0
Angioma	3	0	0	0
Fibrosarcoma	0	1	0	0
Total Number of Tumors	10	12	3	3
Common other Lesions Focal hyperkeratosis (stomach)	3	2	0	0
Focal gastritis	3	1	0	0
Lymphoid infiltration (any organ)	3	0	3	0
Follicular hyperplasia (spleen)	3	0	0	0
Myocarditis	1	0	0	0
Focal pneumonia	0	0	9	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/835

Compound Name Gelatin Control Date Killed 2-16-67

Compound No. -- Oral Date Completed 5-25-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	18	15
No. mice missing (no necropsy or tissue missing)	2	3	0	1
No. mice died during experiment	1	0	0	3
No. mice negative (killed and died)	7	8	13	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	4	3	1
No. mice killed or died, other diseases	7	4	2	5
Tumors				
Lymphatic Leukemia	0	0	0	1
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	3	4	0	0
Total Number of Tumors	3	4	3	3
Common other Lesions				
Hyperplastic Peyer's patch	0	0	0	1
Lymphoid infiltrate lung	0	0	0	1
Lymphoid infiltrate liver	1	0	0	0
Aspiration pneumonia	3	4	2	3
Follicular hyperplasia, spleen	3	0	0	0
Liver necrosis	1	0	0	0
Walled-off hemorrhagic nodule	1	0	0	0
Peri-renal infiltrate	0	0	0	1

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Signed: M G Valerio
Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/830

Compound Name Ethyl Carbamate Date Killed 7-19-66

Compound No. 034-Y, Subcutaneous Date Completed 3-30-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	24	24	24	24
No. mice surviving 18 months	22	23	15	18
No. mice missing (no necropsy or tissue missing)	2	1	9	6
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	12	10	6	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	2	6	4
No. mice killed or died, other diseases	6	11	3	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	4	2	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	2	2
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Gastric papilloma	0	0	1	0
Leiomyoma uterus	0	0	0	1
Total Number of Tumors	5	2	6	6
Common other Lesions				
Follicular hyperplasia, spleen	4	2	0	0
Pneumonitis	3	5	4	1
Lymphoid infiltrations, lungs, kidney	1	5	0	3

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Signed: J/M Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/829

Compound Name Ethyl Carbamate Date Killed 8-5-66

Compound No. 034-X, Oral Date Completed 11-25-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	24	24	24	24
No. mice surviving 18 months	9	13	15	18
No. mice missing (no necropsy or tissue missing)	4	1	2	5
No. mice died during experiment	11	10	7	1
No. mice negative (killed and died)	7	2	1	1
No. mice died with tumors	4	7	5	1
No. mice killed with tumors	8	12	15	17
No. mice killed or died, other diseases	1	2	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	3	5	1
Reticulum Cell Sarcoma, Type B	0	0	1	0
Pulmonary Adenoma	5	5	14	12
Pulmonary Carcinoma	1	1	1	5
Hepatoma	5	8	11	5
Hepatic Carcinoma with Pulmonary metastases	3	4	3	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma	2	4	4	11
Adenoma Harderian Gland	1	5	11	7
Lymphoma	1	0	0	0
Total Number of Tumors	19	30	50	41
Common other Lesions				
Toxic liver	1	1	1	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/749

Compound Name Amitrol Date Killed 7-12-66

Compound No. 089-B, Subcutaneous Date Completed 12-15-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	11	14	13	16
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	3	2	1
No. mice killed or died, other diseases	1	1	3	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	0	0
Pulmonary Carcinoma	0	0	1	0
Hepatoma (No pulmonary metastases)	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Total Number of Tumors	5	3	2	2
Common other Lesions				
Pneumonitis	1	2	3	0

Signed: Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/749

Compound Name Amitrol Date Killed 7-12-66

Compound No. 089-B, Subcutaneous Date Completed 12-15-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	11	14	13	16
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	3	2	1
No. mice killed or died, other diseases	1	1	3	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	0	0
Pulmonary Carcinoma	0	0	1	0
Hepatoma (No pulmonary metastases)	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Total Number of Tumors	5	3	2	2
Common other Lesions				
Pneumonitis	1	2	3	0

Signed: Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/738

Compound Name Ethylene imine Date Killed 8-23-66

Compound No. 078-I, Subcutaneous Date Completed 1- 11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	14	18	11
No. mice missing (no necropsy or tissue missing)	0	2	0	6
No. mice died during experiment	0	2	0	1
No. mice negative (killed and died)	11	15	10	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	1	7	1
No. mice killed or died, other diseases	0	0	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	5	1	6	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	0	1	0
Total Number of Tumors	9	1	7	1
Common other Lesions				
Nephritis	0	0	1	0
Cystic kidneys and ovaries	0	0	0	1

Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/738

Compound Name Ethylene imine Date Killed 12-6-66

Compound No. 078, Oral Date Completed 6-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	4	14	1	3
No. mice missing (no necropsy or tissue missing)	0	3	2	2
No. mice died during experiment	14	2	16	15
No. mice negative (killed and died)	1	0	0	5
No. mice died with tumors	12	1	15	8
No. mice killed with tumors	4	14	1	3
No. mice killed or died, other diseases	5	0	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	14[1]	15[2]	12[2]	10[3]
Pulmonary Carcinoma	1	0	0	0
Hepatoma	15	11	9	2
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Bronchogenic carcinoma	0	0	4	0
Other types				
Lymphosarcoma				1
Bronchogenic sarcoma	0	0	1	0
Gastric Papilloma	1	0	1	1
Angioma liver	1	0	0	0
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	32	26	28	16
Common other Lesions				
Pneumonia	3	0	0	0
Nephritis	2	0	0	0
Lymphoid infiltrate , kidneys	0	0	1	0

1-All multiple pulmonary adenomas.
2-14 are multiple pulmonary adenomas.
3- 8 are multiple pulmonary adenomas.

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Signed: _____
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/782

Compound Name Aramite Date Killed 8-25-66

Compound No. 122-B, Subcutaneous Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	1	2
No. mice negative (killed and died)	11	13	14	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	0	3
No. mice killed or died, other diseases	4	4	4	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, uterus	0	0	0	1
Fibroma	0	0	0	1
Total Number of Tumors	3	1	0	4
Common other lesions Follicular hyperplasia - any site	2	1	0	1
Lymphoid infiltrate - any site	3	3	2	3
Focal pneumonia	2	1	2	0
Osteogenesis, spleen	1	0	0	0
Cystic ovary	0	1	0	0
Pulmonary edema	0	0	0	1
Telangiectasis, liver	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/782

Compound Name Aramite Date Killed 3-23-67

Compound No. 122-C, Oral Date Completed 4-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	16
No. mice missing (no necropsy or tissue missing)	0	1	1	1
No. mice died during experiment	2	2	1	1
No. mice negative (killed and died)	8	5	13	9
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	7	8	2	6
No. mice killed or died, other diseases	3	3	2	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	1	0	0
Pulmonary Adenoma	0	1	0	3
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	1	1	0
Hepatic Carcinoma with Pulmonary metastases	1	0	0	0
Mammary Adeno Carcinoma	0	3	0	1
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	3	0	2
Renal adenoma	0	1	0	0
Renal carcinoma	0	0	1	0
Angioma, spleen	0	1	0	0
Total Number of Tumors	7	11	2	6
Common other Lesions Hydrosalpinx	0	1	0	0
Follicular hyperplasia - any site	3	1	0	3
Lymphoid infiltrate - any site	4	2	1	2
Focal pneumonia	4	0	1	0
Atrophy, testicle	1	0	0	0
Focal hyperkeratosis, stomach	0	1	0	1
Cystic hyperplasia, uterus	0	1	0	0
Cystic endometritis.	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/819

Compound Name Dihydrosafrole Date Killed 11-1-66

Compound No. 160-B, Subcutaneous Date Completed 6-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	15
No. mice missing (no necropsy or tissue missing)	1	0	0	1
No. mice died during experiment	2	0	1	2
No. mice negative (killed and died)	7	10	10	14
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	2	0	0	1
No. mice killed or died, other diseases	8	8	7	1
Tumors				
Lymphatic Leukemia (chronic)	1	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	1	2
Common other Lesions				
Follicular hyperplasia- any site	9	1	1	0
Lymphoid infiltrate - any site	3	2	1	2
Focal pneumonia	3	2	6	0
Cystic endometritis	0	4	0	1
Cysticercus, liver	0	0	1	0
Granuloma, abdominal fat	0	0	0	1

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Signed: Jorge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/819

Compound Name Dihydrosafrole Date Killed 5-18-67

Compound No. 160-C , Oral Date Completed 1-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	15	15
No. mice missing (no necropsy or tissue missing)	0	1	1	0
No. mice died during experiment	2	1	2	3
No. mice negative (killed and died)	3	1	1	3
No. mice died with tumors	1	1	2	2
No. mice killed with tumors	13	11	10	12
No. mice killed or died, other diseases	1	4	4	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	5	5	4
Pulmonary Carcinoma	0	0	0	0
Hepatoma	10	0	8	1
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Carcinoma, stomach, (solid cell) Gastric papilloma	 0 7	 0 9	 0 3	 1 11
Osteogenic sarcoma with metastasis	0	1	0	0
Angioma, liver	0	0	0	1
* Total Number of Tumors	22	16	16	19
Common other Lesions Focal hyperplasia (stomach)	1	0	0	0
Focal hyperkeratosis (stomach)	1	3	5	1
Focal gastritis	1	3	0	0
Follicular hyperplasia(Peyer's patch)	0	0	1	0

*Some mice had multiple tumors.

Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/820

Compound Name Isosafrole Date Killed 11-3-66

Compound No. 161-B, Subcutaneous Date Completed 6-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	1	0	1	1
No. mice negative (killed and died)	11	13	12	9
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	0	1	0
No. mice killed or died, other diseases	4	4	5	7
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	0	1	1
Common other Lesions				
Follicular hyperplasia - any site	2	1	1	2
Lymphoid infiltrate - any site	2	1	1	3
Focal pneumonia	4	2	3	3
Chronic nephritis	1	2	3	3
Cystic seminal vesicles	0	0	1	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/820

Compound Name Isosafrole Date Killed 5-18-67

Compound No. 161-D, Oral Date Completed 6-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	16	17	16
No. mice missing (no necropsy or tissue missing)	0	1	1	2
No. mice died during experiment	0	1	0	1
No. mice negative (killed and died)	5	14	12	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	8	2	4	0
No. mice killed or died, other diseases	5	1	1	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	1	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	3	0	0	0
Renal adenoma	0	0	1	0
Total Number of Tumors	12	2	4	0
Common other Lesions Focal pneumonia	0	0	0	2
Follicular hyperplasia - any site	4	0	0	0
Lymphoid infiltrate - any site	1	0	0	1
Fatty metamorphosis, liver	2	0	1	0
Focal hyperkeratosis, stomach	1	0	0	0
Cystic ovary	0	1	0	0
Focal necrosis, liver	1	0	0	0
Hydrometra (cystic endometritis)	0	1	0	1

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/821

Compound Name Safrole Date Killed 11-3-66

Compound No. 162-B, Subcutaneous Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	12	8	14	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	0	3	2	0
No. mice killed or died, other diseases	6	7	2	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary adeno carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, intestine	0	1	0	0
Total Number of Tumors	0	3	2	0
Common other Lesions Follicular hyperplasia, any site	0	1	0	0
Lymphoid infiltrate, any site	0	4	1	2
Focal pneumonia	4	5	1	1
Subcutaneous abscess	1	0	0	0
Fatty metamorphosis, liver	1	0	0	0

Signed: Borge M. Ulland

BRL Fm. #449

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/821

Compound Name Safrole Date Killed 5-11-67

Compound No. 162-C, Oral Date Completed 1-19-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	14	17	16
No. mice missing (no necropsy or tissue missing)	1	2	1	1
No. mice died during experiment	3	4	1	2
No. mice negative (killed and died)	2	0	13	1
No. mice died with tumors	2	2	0	1
No. mice killed with tumors	9	14	4	15
No. mice killed or died, other diseases	4	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	11	16	3	15
Hepatic Carcinoma with Pulmonary metastases	0	0	0	1
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Gastric papilloma	1	1	1	1
Total Number of Tumors	12	17	4	17
Common other Lesions				
Follicular hyperplasia	8	2	0	0
Focal pneumonia	1	0	0	0
Nephritis	1	0	0	0
Lymphoid infiltrate, any organ	1	0	0	1
Focal gastritis	2	0	0	0
Fatty degeneration - liver	1	0	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/812

Compound Name Isolan Date Killed 8-23-66

Compound No. 152-P, Subcutaneous Date Completed 5-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	1	0	1	2
No. mice negative (killed and died)	11	12	14	13
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	3	0	1	0
No. mice killed or died, other diseases	4	5	2	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	0	2	1
Common other Lesions Follicular hyperplasia, spleen	2	2	0	0
Focal pneumonia	2	2	2	2
Lymphoid infiltrate, lung	0	0	0	2
Dilated ovarian bursa	0	1	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/812

Compound Name Isolan Date Killed 5-4-67

Compound No. 152-P Oral Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	16	16	15
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	5	2	2	3
No. mice negative (killed and died)	9	15	13	8
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	4	0	5	1
No. mice killed or died, other diseases	3	3	0	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	0	5	2
Common other Lesions Follicular hyperplasia - any site	2	1	0	0
Lymphoid infiltrate - any site	0	1	0	6
Focal pneumonia	1	1	0	0
Cystic endometritis	0	2	0	0
Osteogenesis, spleen	1	0	0	0
Necrotizing arteritis	1	0	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D V M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/809

Compound Name Zectran Date Killed 9-13-66

Compound No. 149-H, Subcutaneous Date Completed 4-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	17	17
No. mice missing (no necropsy or tissue missing)	1	0	1	1
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	7	12	14	11
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	1	0	0
No. mice killed or died, other diseases	3	5	3	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Angioma, Spleen	1	0	0	0
Total Number of Tumors	7	1	0	0
Common other Lesions				
Follicular hyperplasia - any site	5	1	0	0
Lymphoid infiltrate - any site	2	1	0	5
Focal pneumonia.	3	3	3	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/809

Compound Name Zectran Date Killed 5-11-67

Compound No. 149-I, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	17	16
No. mice missing (no necropsy or tissue missing)	2	0	0	1
No. mice died during experiment	2	1	1	2
No. mice negative (killed and died)	5	13	12	13
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	10	4	3	0
No. mice killed or died, other diseases	1	1	3	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	3	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Angioma, liver	1	0	0	0
Thymoma	0	0	0	1
Total Number of Tumors	11	4	3	1
Common other Lesions				
Follicular hyperplasia - any site	1	0	0	0
Lymphoid infiltrate - any site	0	0	1	0
Focal pneumonia	2	1	2	3

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/824

Compound Name 4-Dimethylamino-3,5-Xylenol Date Killed 11-8-66

Compound No. 167-B, Subcutaneous Date Completed 6-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	13	16
No. mice missing (no necropsy or tissue missing)	0	1	4	2
No. mice died during experiment	1	0	1	0
No. mice negative (killed and died)	13	12	13	11
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	0	0	0
No. mice killed or died, other diseases	2	5	1	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	0	0	0
Common other Lesions				
Follicular hyperplasia, any site	2	2	0	0
Lymphoid infiltrate, any site	0	0	0	1
Focal pneumonia	1	3	1	4
Pyometra	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/824

Compound Name 4-Dimethylamino-3,5-xylenol Date Killed 6-1-67

Compound No. 167E, Oral Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	0	1	1
No. mice negative (killed and died)	7	3	14	12
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	7	8	3	2
No. mice killed or died, other diseases	3	7	1	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno Mammary Carcinoma with metastasis	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	4	8	0	0
Total Number of Tumors	10	9	3	3
Common other lesions Cystic ovary	0	1	0	0
Follicular hyperplasia - any site	4	1	0	0
Lymphoid infiltrate - any site	1	2	0	2
Focal pneumonia	0	0	1	1
Focal gastritis	2	4	0	0
Chronic nephritis	1	0	0	0
Focal hyperkeratosis, stomach	0	3	1	0
Cystic endometritis	0	2	0	0

Signed: George M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/810

Compound Name CIPC Date Killed 9-13-66

Compound No. 150B, Subcutaneous Date Completed 4-3-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	1	1
No. mice negative (killed and died)	4	12	12	15
No. mice died with tumors	0	0	1	0
No. mice killed with tumors	6	1	3	1
No. mice killed or died, other diseases	8	5	2	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Angioma, liver	0	0	1	0
Total Number of Tumors	7	1	4	1
Common other Lesions				
Follicular hyperplasia - any site	3	0	0	1
Lymphoid infiltrate - any site	5	3	1	1
Focal pneumonia	4	2	2	0
Focal gastritis	3	0	0	0
Focal hyperkeratosis, stomach	0	1	0	0
Cystic ovary	0	1	0	0
Hypoplastic kedney	0	0	0	1

Signed: Borge M Ulland

Borge M Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/810

Compound Name CIPC Date Killed 5-24-67

Compound No. 150-C , Oral Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	15	16
No. mice missing (no necropsy or tissue missing)	1	0	1	0
No. mice died during experiment	3	0	3	2
No. mice negative (killed and died)	10	6	13	8
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	1	0	2
No. mice killed or died, other diseases	1	11	3	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, liver	1	0	0	0
Gastric papilloma	0	1	0	1
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	6	1	1	3
Common other Lesions Follicular hyperplasia - any site	0	0	0	1
Lymphoid infiltrate - any site	0	3	1	5
Focal gastritis	0	4	0	0
Focal pneumonia	1	0	2	1
Focal hyperkeratosis	1	4	0	0
Cystic endometritis	0	1	0	0

Signed: Borge M Ulland

Borge M Ulland, D V M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/710

Compound Name IPC Date Killed 7-21-66

Compound No. 048-D, Subcutaneous Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	1	1
No. mice negative (killed and died)	13	17	14	18
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	0	3	0
No. mice killed or died, other diseases	1	1	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	5	0	3	0
Common other Lesions				
Pneumonitis	1	0	0	0
Subcutaneous micro abscess	0	1	0	0
Cystic seminal vesicle	0	0	1	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/710

Compound Name TPC Date Killed 9-22-66

Compound No. 048-D, Oral Date Completed 7-19-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	17	14	16
No. mice missing (no necropsy or tissue missing)	1	0	1	1
No. mice died during experiment	6	1	3	1
No. mice negative (killed and died)	8	10	12	6
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	5	3	2
No. mice killed or died, other diseases	5	5	1	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	2	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	2	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Fibroadenoma, mammary gland	0	0	0	1
Total Number of Tumors	6	5	5	3
Common other Lesions Follicular hyperplasia, spleen	3	0	0	0
Lymphoid infiltration, kidney, lung	2	1	0	1
Focal pneumonia	1	4	1	8
Aspiration pneumonia	1	0	0	0
Interstitial nephritis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/709

Compound Name Sevin Date Killed 7-21-66

Compound No. 047-E, Subcutaneous Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	1
No. mice negative (killed and died)	13	18	15	11
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	3	0	1	1
No. mice killed or died, other diseases	1	0	2	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	1	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Lymphoma	1	0	0	0
Total Number of Tumors	4	0	1	1
Common other Lesions				
Pneumonitis	0	0	1	4
Lymphoid infiltration, lung	0	0	0	1
Hyperplastic spleen	0	0	0	1
Cystic seminal vesicle	0	0	1	0

Signed: John Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66709

Compound Name SEVIN Date Killed 10-6-66

Compound No. 047-I, Oral Date Completed 7-19-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	1	0
No. mice negative (killed and died)	6	12	11	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	5	1	2	2
No. mice killed or died, other diseases	6	5	5	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	7	1	2	2
Common other Lesions				
Focal necrosis, liver	1	0	0	0
Follicular hyperplasia, spleen	2	1	0	0
Focal pneumonia	3	1	5	1
Follicular hyperplasia, Peyer's Patch	0	1	0	0
Lymphoid infiltration, lung	0	2	0	2

Signed: Borge M. Olland

Borge M. Olland, D.V.M.

BRL Fm. #449

INSECTICIDES: DDT TYPE

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/725

Compound Name p'p' DDT Date Killed 9-29-66

Compound No. 065-C Subcutaneous Date Completed 8-30-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	1	0	3
No. mice negative (killed and died)	8	14	14	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	5	1	3	2
No. mice killed or died, other diseases	7	3	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	1	2	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	2	3	2
Common other Lesions				
Focal pneumonia	2	1	1	2
Follicular hyperplasia (any organ)	2	2	0	2
Lymphocytic infiltration (any organ)	3	1	0	0
Focal chronic nephritis	0	0	1	0
Amyloidosis, kidneys	0	0	0	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/725

Compound Name p,p' -DDT Date Killed 12-8-66

Compound No. 065-F, Oral Date Completed 3-26-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	11	18	13
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	7	0	5
No. mice negative (killed and died)	5	9	10	7
No. mice died with tumors	0	0	0	3
No. mice killed with tumors	11	6	8	4
No. mice killed or died, other diseases	2	3	0	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	1	6
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
[redacted] Carcinoma - Small intestine	1	0	0	0
Hepatoma	10	4	7	1
Hepatic Carcinoma Bile Duct [redacted]	1	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Bronchogenic carcinoma	0	0	0	1
Total Number of Tumors	13	6	10	8
Common other Lesions				
Follicular hyperplasia - any site	1	1	1	2
Lymphoid infiltrate - any site	0	2	1	2
Focal pneumonia	3	2	1	2
Focal hemorrhage, liver	1	1	0	0
Focal hyperkeratosis, stomach	0	4	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/727

Compound Name p,p' - DDD Date Killed 9-22-66

Compound No. 067-C, Subcutaneous Date Completed 9-19-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	2	0	3
No. mice negative (killed and died)	5	13	9	12
No. mice died with tumors	1	1	0	1
No. mice killed with tumors	5	1	3	2
No. mice killed or died, other diseases	8	3	6	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	2	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Lipoma	0	0	1	0
Total Number of Tumors	7	2	3	3
Common other Lesions Focal pneumonia	6	1	6	3
Focal fibrosis	1	0	0	0
Follicular hyperplasia (spleen)	1	1	0	0
Chronic nephritis	0	1	0	0
Lymphocytic infiltration (lung)	0	1	1	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/727

Compound Name p,p' - DDD Date Killed 12/8/66

Compound No. 067-E Oral Date Completed 3/11/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	14	16
No. mice missing (no necropsy or tissue missing)	0	1	2	0
No. mice died during experiment	2	1	3	2
No. mice negative (killed and died)	11	11	8	9
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	6	3	5	6
No. mice killed or died, other diseases	1	3	2	2
Tumors Lymphatic Leukemia	1	0	1	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	4	4
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	2	0	0
Thymoma	0	0	1	0
Leiomyosarcoma - uterus	0	0	0	1
Total Number of Tumors	8	3	6	7
Common other Lesions Follicular Hyperplasia any site	1	0	0	2
Lymphoid infiltrate and site	2	2	0	3
Focal hyperkeratosis -stomach-	0	1	0	0
Focal gastritis	0	2	0	0
Subcutaneous abscess	0	0	1	0
Focal pneumonia	0	0	1	0

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Signed: [signature]

Borge M. Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/714

Compound Name O,P'-DDD Date Killed 7-19-66

Compound No. 052-C, Subcutaneous Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	11	17	16	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	6	0	1	6
No. mice killed or died, other diseases	1	1	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma	0	0	0	1
Total Number of Tumors	6	0	1	6
Common other Lesions				
Hyperplastic spleen	1	0	0	0
Cystic endometritis	0	1	0	0
Pneumonitis	0	0	1	0

Signed: J.R.M. Innes
Dr.J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/714

Compound Name O,P' - DDD Date Killed 8-16-66

Compound No. 052-D, Oral Date Completed 1-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	1
No. mice negative (killed and died)	9	18	13	12
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	7	0	5	6
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	3
Pulmonary Carcinoma	0	0	1	1
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	0	0	0
Leiomyosarcoma, uterus	0	0	0	1
Total Number of Tumors	10	0	5	7
Common other Lesions				

Signed: John Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/732

Compound Name Perthane Date Killed 7-6-66

Compound No. 072-D, Subcutaneous Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	16	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	2	0	0
No. mice negative (killed and died)	14	16	18	16
No. mice died with tumors	0	2	0	0
No. mice killed with tumors	4	0	0	2
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	2	0	2
Common other Lesions				
Cyst, testicle	1			

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/732

Compound Name Perthane Date Killed 1-9-67

Compound No. 072-D, Oral Date Completed 11-13-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	15	17	18
No. mice missing (no necropsy or tissue missing)	0	1	0	1 (Tissue missing)
No. mice died during experiment	3	2	1	0
No. mice negative (killed and died)	9	12	9	14
No. mice died with tumors	1	1	1	0
No. mice killed with tumors	7	1	3	2
No. mice killed or died, other diseases	1	3	5	1
Tumors Lymphatic Leukemia	0	1	0	0
Reticulum Cell Sarcoma, Type A	0	1	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	7	1	1	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Total Number of Tumors	8	3	5	2
Common other Lesions Focal pneumonia	2	0	3	0
Focal nephritis	1	0	0	0
Follicular hyperplasia (spleen)	1	1	0	1
Hydrosalpinx	0	1	0	0
Ovarian abscess	0	1	0	0
Lymphoid infiltrate (lung)	0	0	1	0
Fatty metamorphosis (liver)	0	0	2	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/825

Compound Name Chlorobenzilate Date Killed 11-18-66

Compound No. 168-B, Subcutaneous Date Completed 6-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	16	18
No. mice missing (no necropsy or tissue missing)	1	2	0	0
No. mice died during experiment	1	0	2	0
No. mice negative (killed and died)	7	11	16	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	2	2	1
No. mice killed or died, other diseases	8	3	0	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Osteogenic sarcoma with metastasis	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	2	2	2	1
Common other Lesions Follicular hyperplasia - any site	5	0	0	0
Lymphoid infiltrate - any site	2	0	0	3
Focal pneumonia	5	4	1	1

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Signed: [signature]
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/825

Compound Name Chlorobenzilate Date Killed 6-1-67

Compound No. 168-D, Oral Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	17	16	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	1	2	0
No. mice negative (killed and died)	2	5	9	11
No. mice died with tumors	5	0	1	0
No. mice killed with tumors	8	8	7	3
No. mice killed or died, other diseases	3	5	1	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	1	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	9	0	7	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	3	6	0	0
Angioma, liver	1	0	0	0
Total Number of Tumors	16	8	8	3
Common other Lesions Focal gastritis	1	3	0	1
Follicular hyperplasia - any site	7	0	3	2
Lymphoid infiltrate - any site	1	0	1	1
Periarteritis	1	0	0	0
Focal hyperkeratosis	0	2	0	0
Massive steatitis	0	1	0	0
Cystic seminal vesicles	0	0	1	0
Focal pneumonia	0	0		1

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Signed: [signature]

[signature]

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/828

Compound Name Strobane Date Killed 11-10-66

Compound No. 171-B, Subcutaneous Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	14	16	17
No. mice missing (no necropsy or tissue missing)	5	3	1	0
No. mice died during experiment	0	1	1	1
No. mice negative (killed and died)	6	12	13	15
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	1	0
No. mice killed or died, other diseases	4	2	3	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	1	1	1
Common other Lesions				
Follicular hyperplasia - any site	3	0	0	0
Lymphoid infiltrate - any site	1	0	1	0
Focal pneumonia	3	0	1	2
Cystic ovary	0	1	0	0
Abdominal abscess	0	1	0	0
Hydronephrosis	0	0	1	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/828

Compound Name Strobane Date Killed 5-24-67

Compound No. 171-I, Oral Date Completed 6-24-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	10	17	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	8	1	0	0
No. mice negative (killed and died)	7	12	7	17
No. mice died with tumors	4	1	0	0
No. mice killed with tumors	4	2	11	0
No. mice killed or died, other diseases	3	3	0	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	2	0	0
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	1	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	11	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	8	3	11	0
Common other Lesions				
Follicular hyperplasia - any site	1	2	0	0
Lymphoid infiltrate - any site	0	2	0	1
Focal pneumonia	1	0	1	0
Fatty metamorphosis, liver	1	0	0	0

Signed: Borge M. Ulland D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/826

Compound Name Thiodan Date Killed 11-8-66

Compound No. 169-J, Subcutaneous Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	1	0	0
No. mice negative (killed and died)	9	16	14	14
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	4	1	2	2
No. mice killed or died, other diseases	4	1	2	2
Tumors				
Lymphatic Leukemia (chronic)	1	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	1	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
avernous hemangioma, spleen	1	0	0	0
Total Number of Tumors	5	1	2	2
Common other Lesions				
Follicular hyperplasia - any site	2	0	0	0
Lymphoid infiltrate - any site	0	0	0	0
Focal pneumonia	5	0	2	2
Acute hepatitis	0	1	0	0
Spermatocele	0	0	1	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/826

Compound Name Thiodan Date Killed 5-18-67

Compound No. 169-J, Oral Date Completed 4-3-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	1	1	6	8
No. mice missing (no necropsy or tissue missing)	2	0	4	0
No. mice died during experiment	15	17	8	10
No. mice negative (killed and died)	15	17	13	17
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	1	0
No. mice killed or died, other diseases	0	0	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	1	0	0
Total Number of Tumors	1	1	1	0
Common other Lesions Lymphoid infiltrate - any site	0	0	0	1

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Signed: Borge M Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No 66/826

Compound Name Thiodan Date Killed 10-19-67

Compound No. 169-K, Oral (Dose level 2) Date Completed 6-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	9	9	16	12
No. mice missing (no necropsy or tissue missing)	4	7	0	2
No. mice died during experiment	6	2	2	4
No. mice negative (killed and died)	7	4	13	10
No. mice died with tumors	0	1	0	1
No. mice killed with tumors	6	4	5	4
No. mice killed or died, other diseases	1	2	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Renal adenoma	0	0	1	0
Gastric papilloma	1	2	0	2
Agioma, spleen	0	1	0	0
Subcutaneous fibrosarcoma	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	6	5	6	5
Common other Lesions Follicular hyperplasia - any site	3	1	0	0
Lymphoid infiltrate - any site	1	0	0	0
Focal pneumonia	0	0	0	0
Focal gastritis	0	2	0	0
Pulmonary edema with hemorrhage	1	0	0	1

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/756

Compound Name Mirex Date Killed 10-6-66

Compound No. 096-B, Subcutaneous Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	1	3
No. mice negative (killed and died)	9	16	7	5
No. mice died with tumors	2	0	0	3
No. mice killed with tumors	6	1	6	2
No. mice killed or died, other diseases	1	1	5	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	6	0	1	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	4	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	9	1	7	5
Common other Lesions Follicular hyperplasia - any site	0	1	0	0
Lymphoid infiltrate - any site	0	1	4	9
Focal pneumonia	1	1	3	2

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/756

Compound Name Mirex Date Killed All died P.S.

Compound No. 096, Oral Date Completed 12-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	0	0	0	0
No. mice missing (no necropsy or tissue missing)	0	2	3	2
No. mice died during experiment	18	18	18	18
No. mice negative (killed and died)	10	7	10	6
No. mice died with tumors	7	8	5	10
No. mice killed with tumors	0	0	0	0
No. mice killed or died, other diseases	1	1	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	6	8	5	10
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Hemangioma - liver	1	0	1	0
Total Number of Tumors	7	8	6	10
Common other Lesions Pneumonia	1	1	1	2
Myocarditis	6	1	1	0
Follicular hyperplasia - any site	0	1	0	0
Fatty metamorphosis - liver	0	1	0	0

Signed: J.R.M. Innes

Dr. J.R.M. Innes

SRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/818

Compound Name Telodrin Date Killed 11-3-68

Compound No. 159-I, Subcutaneous Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	16	15	12
No. mice missing (no necropsy or tissue missing)	3	2	2	5
No. mice died during experiment	1	0	1	1
No. mice negative (killed and died)	8	14	14	7
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	1	1
No. mice killed or died, other diseases	4	1	1	4
Tumors				
Lymphocytic Leukemia with spleen, node and lung infiltrate	1	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	3	1	1	2
Common other Lesions				
Follicular hyperplasia, any site	0	0	0	4
Lymphoid infiltrate, any site	1	0	0	0
Focal pneumonia	4	1	1	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/818

Compound Name Telodrin Date Killed 5-18-67

Compound No. 159-M, Oral Date Completed 6-20-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	6	0	8	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	9	6	2
No. mice killed or died, other diseases	5	9	4	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	5	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	5	9	0	0
Total Number of Tumors	7	11	6	2
Common other Lesions Follicular hyperplasia - any site	2	1	1	1
Lymphoid infiltrate - any site	2	0	1	1
Focal pneumonia	2	1	2	3
Focal gastritis	3	2	0	0
Osteogenesis, spleen	1	0	0	0
Focal hyperkeratosis, stomach	0	7	0	0
Cystic endometritis	0	2	0	0

Signed: John Borge Ulland

Borge M. Ulland, D.V.M.

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/703

Compound Name Piperonyl Butoxide Date Killed 6-1-66

Compound No. 027-E, Subcutaneous Date Completed 11-29-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	17	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	2	1	0
No. mice negative (killed and died)	14	12	16	16
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	2	2	1	1
No. mice killed or died, other diseases	0	3	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Fibroma, benign	0	1	0	0
Total Number of Tumors	3	3	1	1
Common other Lesions				
Cystic Endometritis	0	3	0	1

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Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/703

Compound Name Piperonyl Butoxide Date Killed 1-19-67

Compound No. 027-E , Oral Date Completed 9-27-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	4	11	14	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	6	3	1	3
No. mice killed or died, other diseases	6	4	3	2
Tumors				
Lymphatic Leukemia (Acute stem cell)	0	1	0	0
Reticulum Cell Sarcoma, Type A	5	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Angioma (spleen)	2	0	0	0
Total Number of Tumors	9	3	1	3
Common other Lesions				
Follicular hyperplasia (spleen)	8	0	0	0
Osteogenesis, kidney	1	0	0	0
Osteogenesis, spleen	1	0	0	0
Focal chronic nephritis	1	0	0	0
Lymphoid infiltrate (any organ)	2	1	1	3
Focal pneumonia	0	3	2	0

Signed: Borge M. Olland
Borge M. Olland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/752

Compound Name Butacide Date Killed 7-12-66

Compound No. 092-B, Subcutaneous Date Completed 11-14-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	11	15	11	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	1	2	4
No. mice killed or died, other diseases	0	2	5	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	1
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	0	0	0
Total Number of Tumors	7	1	2	4
Common other Lesions				
Pneumonitis	0	1	4	0
Cystic ovary	0	1	0	0
Pulmonary edema	0	0	1	0

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Signed: [signature]
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/752

Compound Name Butacide Date Killed 3-23-67

Compound No. 092-C, Oral Date Completed 3-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	5	0	0	0
No. mice negative (killed and died)	9	13	15	9
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	0	3	3
No. mice killed or died, other diseases	2	5	0	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	7	0	3	3
Common other Lesions Focal myocarditis	1	0	0	0
Lymphoid infiltrate (any organ)	1	5	0	5
Follicular hyperplasia (any organ)	0	2	0	1
Focal pneumonia	0	0	0	3

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/704

Compound Name Piperonyl Sulfoxide Date Killed 7-12-66

Compound No. 028-F, Subcutaneous Date Completed 11-29-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	17	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	1	0	3
No. mice negative (killed and died)	12	16	17	15
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	6	2	1	2
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	1	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Hemangioma, spleen	1	0	0	0
Total Number of Tumors	8	2	1	3
Common other Lesions				

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Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/704

Compound Name Piperonyl Sulfoxide Date Killed 12-13-66

Compound No. 028, Oral Date Completed 9-27-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	15	18	14
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	3	0	4
No. mice negative (killed and died)	3	11	12	13
No. mice died with tumors	3	1	0	2
No. mice killed with tumors	7	3	2	0
No. mice killed or died, other diseases	6	3	4	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	8	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	3	0	0	0
Total Number of Tumors	13	1	2	3
Common other Lesions Pulmonary hemorrhage	1	0	0	0
Focal pneumonia	3	0	3	1
Follicular hyperplasia (spleen)	3	1	1	0
Lymphoid infiltration (lung)	2	0	1	2
Micro-abscess (stomach) Focal disseminated hepatitis	2 0	0 1	0 0	0 0
Fatty meramorphosis (liver) Pyelonephritis	0 0	1 0	0 1	0 0
Mycotic granuloma	1	0	0	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/705

Compound Name n-Propyl isome Date Killed 7-21-66

Compound No. 029-B, Subcutaneous Date Completed 11-21-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	17
No. mice missing (no necropsy or tissue missing)	2	0	1	1
No. mice died during experiment	0	0	1	0
No. mice negative (killed and died)	9	16	13	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	5	0	3	3
No. mice killed or died, other diseases	2	2	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	0	0	1	1
Total Number of Tumors	5	0	3	4
Common other Lesions				
Lymphoid infiltration, liver, kidney	1	0	0	0
Cystic endometritis	0	1	0	0
Lymphoid infiltration, lung	0	1	0	0
Pneumonitis	0	0	1	1

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/705

Compound Name N-Propyl Isome

Date Killed 1-12-67

Compound No. 029-A, Oral

Date Completed 10-16-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	17	15
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	5	0	1	3
No. mice negative (killed and died)	8	16	15	14
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	7	0	2	2
No. mice killed or died, other diseases	1	2	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	9	0	2	3
Common other Lesions				
Lymphoid infiltration (any organ)	4	0	0	0
Focal pneumonia	1	0	0	0
Splenic hypertrophy	1	0	0	0
Cystic ovary	0	1	0	0
Cystic endometritis	0	1	0	0
Fatty metamorphosis (liver)	0	0	1	0
Myocarditis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

INSECTICIDES:
VARIOUS STRUCTURES

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/769

Compound Name Bis-(2-Chloroethyl)-ether Date Killed 7-28-66

Compound No. 109-D, Subcutaneous Date Completed 6-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	0	0	18	18
No. mice surviving 18 months			2	9
No. mice missing (no necropsy or tissue missing)			4	2
No. mice died during experiment			12	7
No. mice negative (killed and died)			13	13
No. mice died with tumors			1	0
No. mice killed with tumors			0	0
No. mice killed or died, other diseases			0	3
Tumors Lymphatic Leukemia			0	0
Reticulum Cell Sarcoma, Type A			1	0
Reticulum Cell Sarcoma, Type B			0	0
Pulmonary Adenoma			0	0
Pulmonary Carcinoma			0	0
Hepatoma			0	0
Hepatic Carcinoma with Pulmonary metastases			0	0
Mammary Carcinoma			0	0
Carcinoma, skin			0	0
Other types				
Total Number of Tumors			1	0
Common other Lesions				
Hydrometra			0	3

MC

Signed: Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/769I

Compound Name Bis-(2-chloroethyl)- ether Date Killed 7-28-66

Compound No. 109-D, Subcutaneous Date Completed 4-3-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	15	12	14
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	3	6	4
No. mice negative (killed and died)	8	8	10	11
No. mice died with tumors	0	1	1	0
No. mice killed with tumors	6	1	1	1
No. mice killed or died, other diseases	3	8	6	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	1	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	2	3	1
Common other Lesions Follicular hyperplasia - any site	1	0	0	1
Lymphoid infiltrate - any site	3	3	1	3
Focal pneumonia	2	3	5	2
Cystic ovary	0	1	0	0
Pyometra with hemorrhage	0	1	0	0
Hydronephrosis	0	0	2	0
Hypoplastic kidney	0	0	0	1

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Signed: Borge M. Ulland, D V M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/769

Compound Name Bis - (2-chloroethyl) ether Date Killed 3-9-67

Compound No. 109-E, Oral I Date Completed 3-1-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	15	17
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	5	0	3	1
No. mice negative (killed and died)	0	13	5	15
No. mice died with tumors	5	0	2	1
No. mice killed with tumors	11	4	8	0
No. mice killed or died, other diseases	0	1	3	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	14	4	9	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Subcutaneous fibrosarcoma	1	0	0	0
Angioma, liver	1	0	1	0
Ganglioneuroma, adrenal	0	0	1	0
Total Number of Tumors	18	4	13	1
Common other Lesions				
Follicular hyperplasia	2	1	1	1
Lymphoid infiltration	1	1	2	0
Pulmonary microabscess	1	0	0	0
Cystic endometritis	0	1	0	0
Focal pneumonia	0	0	1	0
Cystic ovary	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/763

Compound Name Rotenone Date Killed 9-22-66

Compound No. 103-E, Subcutaneous Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	15	18	18
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	6	2	0	0
No. mice negative (killed and died)	10	14	14	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	1	0	1	1
No. mice killed or died, other diseases	7	3	3	6
Tumors *Lymphatic Leukemia*	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	1	1
Common other Lesions Focal pneumonia	4	2	3	5
Follicular hyperplasia, spleen	2	0	0	0
Nephritis	1	0	0	0
Hydrosalpinx	0	1	0	0
Lymphoid infiltration, lung	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/763

Compound Name 103 Rotenone Date Killed 5-18-67

Compound No. 103-K, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	16	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	2	0
No. mice negative (killed and died)	11	11	14	13
No. mice died with tumors	1	0	1	0
No. mice killed with tumors	4	3	2	2
No. mice killed or died, other diseases	2	4	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	2
Pulmonary Carcinoma (bronchogenic)	0	1	0	0
Hepatoma	2	1	1	0
Hepatic Carcinoma with Pulmonary metastases	1	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Subcutaneous fibrosarcoma	0	0	1	0
Angioma, uterus	0	1	0	0
Teratoma, ovary	0	0	0	1
Total Number of Tumors	5	3	3	3
Common other Lesions				
Follicular hyperplasia - any site	0	0	0	1
Lymphoid infiltrate - any site	1	1	0	0
Focal pneumonia	1	1	2	1
Cystic endometritis	0	2	0	0
Glomerular sclerosis	0	1	0	0
Hepatitis (acute)	1	0	0	0
Abscess, uterus	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/799

Compound Name Phenothiazine Date Killed 10-20-66

Compound No. 139-B, Subcutaneous Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	1	0	1
No. mice negative (killed and died)	5	14	11	14
No. mice died with tumors	3	1	0	0
No. mice killed with tumors	2	0	2	0
No. mice killed or died, other diseases	8	3	5	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	5	1	2	0
Common other Lesions				
Follicular hyperplasia - any site	2	1	1	0
Lymphoid infiltrate - any site	0	1	0	2
Focal pneumonia	7	2	4	3
Osteogenesis, spleen	1	0	0	0

Signed: J. W. Innes
for B. Ullano

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/799

Compound Name Phenothiazine Date Killed 5-4-67

Compound No. 139-D, Oral Date Completed 2-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	16	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	3	0	2	1
No. mice negative (killed and died)	12	16	12	15
No. mice died with tumors	1	0	1	0
No. mice killed with tumors	1	0	3	2
No. mice killed or died, other diseases	3	2	2	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	4	2
Common other Lesions				
Nephritis	1	0	0	0
Focal pneumonia	2	0	0	0
Steatitis (abdominal fat)	1	0	0	0
Pancreatitis with cysts	1	0	0	0
Cystic kidney	0	0	1	0
Cystic endometritis	0	1	0	0
Lymphoid infiltrate	0	1	0	0
Hydronephrosis	0	0	1	0
Fatty metamorphosis (liver)	0	0	0	1

Signed: Borge M. Uiland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/726

Compound Name ATRAZINE Date Killed 9-29-66

Compound No. 066-E, Subcutaneous Date Completed 8-29-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	24	12
No. mice surviving 18 months	17	15	24	10
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	1	3	0	0
No. mice negative (killed and died)	8	13	12	9
No. mice died with tumors	1	2	0	0
No. mice killed with tumors	5	1	0	0
No. mice killed or died, other diseases	4	2	12	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma	1	0	0	0
Total Number of Tumors	6	3	0	0
Common other Lesions				
Focal chronic nephritis	0	0	10	0
Focal pneumonia	2	1	1	1
Follicular hyperplasia (any organ)	2	0	0	0
Lymphoid infiltrate (any organ)	1	1	1	0
Arteritis	1	0	0	0
Vascular ectasia (liver & spleen)	1	0	0	0
bone formation (spleen)	1	0	0	0
focal fibrosis	0	0	1	0
Cystic seminal vesicle	0	0	1	0
Glomerulitis	0	0	1	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/726

Compound Name Atrazine Date Killed 12-13-66

Compound No. 066-G, Oral Date Completed 10-13-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	8	14	9	9
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	6	1	3	2
No. mice killed or died, other diseases	3	3	5	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Plasma cell sarcoma	0	0	0	1
Total Number of Tumors	6	1	4	3
Common other Lesions				
Focal pneumonia	4	3	2	2
Hematoma, spleen	1	0	0	0
Follicular hyperplasia, spleen	1	0	0	0
Lymphocytic infiltrate, lung	0	0	4	4
Diffuse hepatitis with necrosis	0	0	0	1
Subcutaneous mycotic granuloma	2	0	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/701

Compound Name Propazine Date Killed 9-13-66

Compound No. 025-E, Subcutaneous Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	1	1
No. mice negative (killed and died)	9	12	16	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	0	0
No. mice killed or died, other diseases	8	6	2	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	2	0	1
Common other Lesions				
Follicular hyperplasia, spleen	4	4	2	5
Focal pneumonia	4	0	0	0
Hydrosalpinx	0	1	0	0
Lymphoid infiltration, kidneys	0	1	0	1
Lymphoid infiltration, lung	0	1	0	0
Cystic ovary	0	1	0	0
Nodular hyperplasia, spleen	0	0	0	1

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Signed: Borge M. Olland

Borge M. Olland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/701

Compound Name Propazine Date Killed 1-12-67

Compound No. 025-F, Oral Date Completed 9-27-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	18	16	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	0	2	1
No. mice negative (killed and died)	9	14	8	7
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	5	1	4	4
No. mice killed or died, other diseases	3	3	7	7
Tumors				
Lymphatic Leukemia	1	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	1	4	5
Common other Lesions				
Nephritis	1	0	0	0
Follicular hyperplasia	1	0	0	3
Focal pneumonia	1	1	7	1
Ovarian abscess	0	1	0	0
Lymphoid infiltrate (lung)	0	1	0	6

Signed: Borge M. Julland
Borge M. Julland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/700

Compound Name Simazine Date Killed 9-7-66

Compound No. 024-B, Subcutaneous Date Completed 11-14-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	18
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	17	17	15	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	1	2
No. mice killed or died, other diseases	0	0	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	1	1	1	2
Common other Lesions				
Cystic seminal vesicle	0	0	1	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/700

Compound Name Simazine Date Killed 12-8-66

Compound No. 024-D, Oral Date Completed 9-5-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	16	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	2	1
No. mice negative (killed and died)	11	8	8	8
No. mice died with tumors	2	0	1	0
No. mice killed with tumors	4	2	4	0
No. mice killed or died, other diseases	1	8	8	10
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	1	0
Pulmonary Adenoma	0	1	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Subcutaneous fibrosarcoma	1	0	0	0
Angioma	0	0	1	0
Total Number of Tumors	6	2	5	0
Common other Lesions Focal pneumonia	1	7	7	7
Cystic ovary	0	1	0	0
Follicular hyperplasia (any organ)	0	0	1	0
Lymphocytic infiltration (any organ)	0	0	0	3

Signed: Borge M Ulland
Borge M Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/745

Compound Name Hercules - 7531 Date Killed 9-27-66

Compound No. 085-B, Subcutaneous Date Completed 2-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	1	2	1	2
No. mice negative (killed and died)	8	12	16	12
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	1	2	0	1
No. mice killed or died, other diseases	9	3	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Papilloma	0	0	0	1
Total Number of Tumors	1	2	0	2
Common other Lesions				
Tapeworm cyst	1	0	0	0
Focal pneumonia	5	2	2	0
Follicular hyperplasia	3	0	0	0
Myocarditis	1	0	0	0
Lymphoid infiltration, lung	0	1	0	3
Hydronephrosis	0	0	0	1
Subcutaneous abscess	0	0	0	1

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/745

Compound Name Hercules - 7531 Date Killed 2-2-67

Compound No. 085-C, Oral Date Completed 2-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	16
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	13	15	15	13
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	4	1	2	0
No. mice killed or died, other diseases	1	1	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	1	2	1
Common other Lesions Follicular hyperplasia	1	0	1	1
Lymphoid infiltrate, kidney	1	0	0	0
Abscess, uterus	0	1	0	0
Focal pneumonia	0	1	0	2
Nephritis	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/715

Compound Name Diuron Date Killed 9-15-66

Compound No. 053-B, Subcutaneous Date Completed 7-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	1
No. mice negative (killed and died)	8	14	10	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	2	0	1	1
No. mice killed or died, other diseases	9	4	7	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	0	1	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	2	0	1	3
Common other Lesions Lymphoid infiltrate, lung	1	1	2	4
Focal pneumonia	3	2	5	3
Follicular hyperplasia, spleen	5	0	0	2
Cystic ovary	0	1	0	0
Focal hyperkeratosis, stomach	0	0	1	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/715

Compound Name Diuron Date Killed 12-15-66

Compound No. 053-C , Oral Date Completed 11-28-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	1	1
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	8	7	7	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	4	6	1
No. mice killed or died, other diseases	7	7	4	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma	1	0	1	0
Gastric papilloma	0	1	0	0
Total Number of Tumors	3	4	6	2
Common other Lesions				
Focal pneumonia	8	5	3	4
Follicular hyperplasia	1	1	0	1
Gastric hyperkeratosis and/or gastritis	1	1	1	0
Scrotal sac abscess	1	0	0	0
Lymphoid infiltrate	1	2	0	1
Hydrosalpinx	0	1	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/720

Compound Name 059-E, Monuron Date Killed 9-29-66

Compound No. 059-E, Subcutaneous Date Completed 8-14-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	2
No. mice negative (killed and died)	12	13	14	12
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	3	2	1	1
No. mice killed or died, other diseases	1	3	3	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hemangiosarcoma, liver	1	0	0	0
Total Number of Tumors	5	2	1	2
Common other Lesions				
Focal pneumonia	1	2	2	2
Lymphoid infiltrate, lung	0	1	0	2
Follicular hyperplasia, spleen	0	0	1	0
Cystic kidney	0	0	0	1
Lymphoid infiltration, kidney	0	0	0	1

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/720

Compound Name Monuron Date Killed 12-8-66

Compound No. 059-D, Oral Date Completed 1-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	16	17
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	1	0	2	1
No. mice negative (killed and died)	8	14	11	11
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	0	6	3
No. mice killed or died, other diseases	1	4	1	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	6	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Total Number of Tumors	7	0	6	3
Common other Lesions Focal pneumonia	3	3	1	4
Focal hyperkeratosis (stomach)	0	1	0	0
Focal gastritis	1	0	0	0
Follicular hyperplasia	0	1	0	0
Cystic endometritis	0	0	0	1
Lymphoid infiltrate, lung	0	0	0	1

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/816

Compound Name Ethylene urea Date Killed 10-27-66

Compound No. 157-B, Subcutaneous Date Completed 2-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	17	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	1	1	1
No. mice negative (killed and died)	9	11	11	13
No. mice died with tumors	2	1	1	0
No. mice killed with tumors	2	1	1	2
No. mice killed or died, other diseases	4	5	5	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Malignant lymphoma	0	0	1	0
Total Number of Tumors	4	2	2	2
Common other Lesions Focal pneumonia	3	1	4	0
Lymphoid hyperplasia	2	0	0	0
Hyperplasia (Peyer's nodule)	1	0	0	0
Ovarian cyst	0	1	0	0
Cystic endometritis	0	3	0	3
Focal lymphoid infiltration	0	0	1	0

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/816

Compound Name Ethylene urea Date Killed 5-11-67

Compound No. 157-D Oral Date Completed 1-30-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	16	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	4	1	1	2
No. mice negative (killed and died)	7	12	13	13
No. mice died with tumors	1	0	2	1
No. mice killed with tumors	4	2	1	3
No. mice killed or died, other diseases	6	3	2	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	2	0	1
Malignant lymphoma	0	0	0	1
Total Number of Tumors	5	2	3	4
Common other Lesions				
Lymphoid hyperplasia (any site)	3	0	1	0
Focal tissue necrosis	1	0	1	0
Angiectasis - (any site)	1	1	1	0
Chronic nephritis	2	0	0	0
Osseous metaplasia, spleen	1	0	0	0
Cystic endometritis	0	2	0	0
Pneumonitis (foreign body)	0	1	2	1

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/718

Compound Name Maleic hydrazide Date Killed 9-15-66

Compound No. 057-B, Subcutaneous Date Completed 7-10-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	2	0	0
No. mice negative (killed and died)	9	13	12	12
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	4	4	1	1
No. mice killed or died, other diseases	7	0	5	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	3	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Renal adenoma	1	0	0	0
Spindle cell sarcoma	1	0	0	0
Total Number of Tumors	6	5	1	1
Common other Lesions				
Follicular hyperplasia, spleen,	3	0	0	0
Pneumonia, foreign body pneumonitis and focal pneumonia	5	0	5	3
Pulmonary edema	0	0	0	1
Lymphoid hyperplasia, lungs	0	0	0	1

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/718

Compound Name Maleic hydrazide Date Killed 2-2-67

Compound No. 057-B, Oral Date Completed 12-7-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	14	12
No. mice missing (no necropsy or tissue missing)	1	1	1	0
No. mice died during experiment	3	1	4	6
No. mice negative (killed and died)	10	11	11	9
No. mice died with tumors	1	0	1	3
No. mice killed with tumors	2	0	2	1
No. mice killed or died, other diseases	4	6	3	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	2	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	4	0	3	5
Common other Lesions				
Lymphoid infiltration (any organ)	2	2	2	4
Follicular hyperplasia, spleen	5	1	1	1
Focal pneumonia	1	3	0	1
Subcutaneous phycomycosis	1	1	0	0
Focal hyperkeratosis	0	0	0	0
Pyemic Nephritis	0	0	1	0

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/814

Compound Name n-(2-Hydroxyethyl) hydrazine Date Killed 9-6-66

Compound No. 154-G, Subcutaneous Date Completed 5-31-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	16	16
No. mice missing (no necropsy or tissue missing)	0	1	2	0
No. mice died during experiment	1	1	0	2
No. mice negative (killed and died)	12	14	13	10
No. mice died with tumors	1	0	0	2
No. mice killed with tumors	1	0	2	1
No. mice killed or died, other diseases	4	3	1	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Malignant lymphoma	1	0	0	0
Fibrosarcoma, liver	0	0	0	1
Total Number of Tumors	2	0	2	3
Common other Lesions Focal pneumonia	1	1	1	2
Follicular hyperplasia - any site	3	0	0	1
Lymphoid infiltrate - any site	0	0	0	1
Cysticercus, liver	0	1	0	2
Dilated pancreatic duct	0	1	0	0
Subcutaneous abscess	0	0	1	0
Telangiectasis, liver	0	0	0	1

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/314

Compound Name n-(2-hydroxethyl)- Hydrazine Date Killed 6-1-67

Compound No. 154-J, Oral Date Completed 6-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	1	0	2
No. mice negative (killed and died)	3	8	8	14
No. mice died with tumors	0	0	0	2
No. mice killed with tumors	10	9	10	1
No. mice killed or died, other diseases	4	1	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	7	1	10	0
Hepatic Carcinoma with Pulmonary metastases	1	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Hemangiosarcoma, spleen, testicle	1	0	0	0
Gastric papilloma	0	8	0	0
Total Number of Tumors	11	10	11	3
Common other Lesions - Osteogenesis, spleen	1	0	0	0
Follicular hyperplasia - any site	4	1	0	0
Lymphoid infiltrate - any site	1	2	0	1
Fatty metamorphosis, liver	1	0	0	0
Polyposis - urinary bladder	1	0	0	0
Erythropoietic foci, liver	1	0	0	0
Subcutaneous abscess	0	0	1	0
Diffuse hepatitis	0	0	0	1

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/770

Compound Name Azobenzene Date Killed 8/18/66

Compound No. 110, Subcutaneous Date Completed 3/21/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	10	14	16	14
No. mice died with tumors	2	0	1	0
No. mice killed with tumors	2	1	0	1
No. mice killed or died, other diseases	4	3	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Malignant lymphoma	0	0	1	0
Leiomyosarcoma, uterus	0	0	0	1
Total Number of Tumors	4	1	1	2
Common other Lesions Focal pneumonia	5	4	0	0
Lymphoid infiltrate - any site	1	0	1	2
Follicular hyperplasia - any site	0	0	1	1
Cystic enometritis	0	0	0	1
Cystic ovary	0	1	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/770

Compound Name Azobenzene Date Killed 3-23-67

Compound No. 110-G, Oral Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	18	15
No. mice missing (no necropsy or tissue missing)	0	1	0	2
No. mice died during experiment	2	1	0	1
No. mice negative (killed and died)	8	12	13	10
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	8	1	3	2
No. mice killed or died, other diseases	1	4	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	8	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Total Number of Tumors	9	1	3	3
Common other Lesions				
Lymphoid infiltrate - any site	1	4	0	2
Follicular hyperplasia - any site	1	1	0	2
Cystic ovary	0	1	0	0
Pneumonia, Acute	0	0	1	0
Focal hyperkeratosis	0	0	1	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/737

Compound Name Dicryl Date Killed 7-12-66

Compound No. 077-B, Subcutaneous Date Completed 12-13-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	10	17	16	15
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	7	0	0	1
No. mice killed or died, other diseases	0	1	2	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types A-gioma, liver	1	0	0	0
Total Number of Tumors	7	0	0	1
Common other Lesions Cystic ovary	0	1	0	0
Pneumonitis	0	0	1	0
Lymphoid infiltration, kidneys	0	0	1	0
Lymphoid infiltration, lungs	0	0	0	1
Mycotic granuloma	1	0	0	0

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Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/737

Compound Name Dicryl Date Killed 12-6-66

Compound No. 077-G, Oral Date Completed 2-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	17
No. mice missing (no necropsy or tissue missing)	2	0	0	1
No. mice died during experiment	1	0	1	0
No. mice negative (killed and died)	7	16	12	13
No. mice died with tumors	0	0	1	0
No. mice killed with tumors	7	0	3	0
No. mice killed or died, other diseases	2	2	2	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Subcutaneous undifferentiated sarcoma ~~with metastasis to lung.~~	0	0	1	0
Total Number of Tumors	7	0	4	0
Common other Lesions Focal pneumonia	1	0	1	3
Lymphoid infiltrate	1	2	1	2

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/772

Compound Name 1-Naphthalene - acetamide Date Killed 8-9-66

Compound No. 112-F, Subcutaneous Date Completed 4-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	16	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	7	1	1	1
No. mice negative (killed and died)	8	13	9	13
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	0	0	1
No. mice killed or died, other diseases	6	4	9	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma - Bronchogenic	1	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	0	0	1
Common other Lesions Follicular hyperplasia - any site	4	1	0	1
Lymphoid infiltrate - any site	4	1	3	2
Focal pneumonia	2	0	5	1
Nephritis	1	0	0	0
Focal necrosis - any site	1	0	0	0
Hydrosalpinx	0	1	0	0
Cystic endometritis	0	1	0	0
Subcutaneous abscess	0	0	1	0

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ERL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/772

Compound Name 1-Napthalene acetamide Date Killed 3-9-67

Compound No. 112-C, Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	13	16	15
No. mice missing (no necropsy or tissue missing)	0	2	1	1
No. mice died during experiment	4	4	1	3
No. mice negative (killed and died)	9	10	17	14
No. mice died with tumors	1	1	0	2
No. mice killed with tumors	5	3	0	1
No. mice killed or died, other diseases	3	2	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Undifferentiated subcutaneous sarcoma	0	1	0	0
Total Number of Tumors	6	5	0	3
Common other Lesions				
Follicular hyperplasia any site	5	1	0	0
Lymphoid infiltrate - any site	1	0	0	0
Osteogenesis, spleen	2	0	0	0
Focal pneumonia	0	3	0	0
Focal necrosis, liver	0	1	0	0

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/768

Compound Name 1-Naphthalene Acetic Acid Date Killed 8-16-66

Compound No. 108-E, Subcutaneous Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	15
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	2	0	0	3
No. mice negative (killed and died)	10	12	7	9
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	0	0
No. mice killed or died, other diseases	6	5	11	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	1	0	1
Common other Lesions				
Hepatitis	2	0	0	0
Ossification focal, spleen	1	0	0	0
Focal pneumonia	2	4	8	3
Lymphoid infiltrate, liver, kidneys	1	0	0	0
Follicular hyperplasia, spleen	2	0	0	2
Lymphoid infiltrate, lung, kidney	0	2	2	1
Cystic subcutaneous sebaceous gland	0	0	2	0
Subcutaneous abscess	0	0	1	0
Hydrosalpinx	0	0	0	1
Cystic endometritis	0	0	0	1

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Signed: Borge M. Ugland, D.V.M.

BRL Fm. #444

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/768

Compound Name 1-Napthalene acetic acid Date Killed 3-23-67

Compound No. 108-D Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	14
No. mice missing (no necropsy or tissue missing)	0	2	0	0
No. mice died during experiment	2	0	1	4
No. mice negative (killed and died)	10	12	15	13
No. mice died with tumors	0	0	1	2
No. mice killed with tumors	5	0	2	1
No. mice killed or died, other diseases	3	4	0	2
Tumors				
Lymphatic Leukemia (Chronic)	1	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma - spleen	1	0	0	0
Angioma, liver	0	0	0	2
Leiomysarcoma, uterus	0	0	0	1
Total Number of Tumors	6	0	3	4
Common other Lesions				
Follicular hyperplasia - any site	3	1	0	0
Lymphoid infiltrate - any site	2	3	0	2
Abdominal abscess	0	1	0	0

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Signed: [redacted]

BRL Fm. #449

Borge M. Ulland, D V M

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/823

Compound Name Indole-3-acetic acid Date Killed 11-3-66

Compound No. 166-B,Subcutaneous Date Completed 6-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	11	17	18
No. mice missing (no necropsy or tissue missing)	0	4	0	0
No. mice died during experiment	6	3	1	0
No. mice negative (killed and died)	9	12	11	14
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	0	1	1
No. mice killed or died, other diseases	4	2	6	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	0	1	1
Common other Lesions Follicular hyperplasia - any site	2	1	1	0
Lymphoid infiltrate - any site	2	0	2	3
Focal pneumonia	1	1	4	0
Splenic hematomata	1	0	0	0
Cystic seminal vesicle	0	0	1	0

2066

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/823

Compound Name Indole-3-acetic acid Date Killed 5-18-67

Compound No. 166-D, Oral Date Completed 6-20-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	7	7	13	12
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	8	2	3	2
No. mice killed or died, other diseases	1	8	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	1	0	0
Angioma, spleen	1	0	0	0
Total Number of Tumors	10	2	3	2
Common other Lesions Pyometra	0	1	0	0
Follicular hyperplasia - any site	1	3	1	2
Lymphoid infiltrate - any site	0	1	0	1
Focal pneumonia	1	0	1	1
Subcutaneous abscess	1	0	0	0
Focal gastritis	0	7	0	0
Cystic endometritis	0	4	0	0
Focal hyperkeratosis, stomach	0	1	0	0
Splenic necrosis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

HERBICIDES: GROWTH REGULATORS 2,4-D TYPE

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/724

Compound Name 2,4-D Date Killed 7-26-66

Compound No. 063-C, Subcutaneous Date Completed 6-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	0	4	2	6
No. mice missing (no necropsy or tissue missing)	18	14	13	5
No. mice died during experiment	18	14	16	12
No. mice negative (killed and died)		4	5	12
No. mice died with tumors		0	0	0
No. mice killed with tumors		0	0	1
No. mice killed or died, other diseases		0	0	1
Tumors				
Lymphatic Leukemia				
Reticulum Cell Sarcoma, Type A				
Reticulum Cell Sarcoma, Type B				
Pulmonary Adenoma				1
Pulmonary Carcinoma				
Hepatoma				
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Leiomyoma, uterus				1
Total Number of Tumors				2
Common other Lesions				
Hepatitis				1

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Signed: _____
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/724

Compound Name 2,4-D Date Killed 7-26-66

Compound No. 063-D, Subcutaneous Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	0	0
No. mice negative (killed and died)	14	17	16	17
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	3	0	1	0
No. mice killed or died, other diseases	0	0	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Mammary fibroadenoma	0	1	0	0
Hemangioma, liver	0	0	1	0
Total Number of Tumors	4	1	1	0
Common other Lesions				
Cystic right kidney	0	0	1	0
Hydronephrosis, left kidney	0	0	0	1

Signed: John Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/724

Compound Name 2,4-D Date Killed 4-20-67

Compound No. 063-E, Oral Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	NO ANIMALS PUT ON		18	18
No. mice surviving 18 months	STUDY		11	13
No. mice missing (no necropsy or tissue missing)			6	2
No. mice died during experiment			1	3
No. mice negative (killed and died)			6	8
No. mice died with tumors			0	1
No. mice killed with tumors			1	1
No. mice killed or died, other diseases			5	6
Tumors				
Leukemia Stem cell			0	1
Reticulum Cell Sarcoma, Type A			0	0
Reticulum Cell Sarcoma, Type B			0	0
Pulmonary Adenoma			1	1
Pulmonary Carcinoma			0	0
Hepatoma			0	0
Hepatic Carcinoma with Pulmonary metastases			0	0
Mammary Carcinoma			0	0
Carcinoma, skin			0	0
Other types				
Malignant lymphoma			0	1
Total Number of Tumors			1	3
Common other Lesions				
Follicular hyperplasia - any site			2	3
Lymphoid infiltrate - any site			2	4
Focal pneumonia			1	3
Cystic seminal vesicles			1	0
Nephritis			1	0

Signed: Borgé M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/724

Compound Name 2,4-D Date Killed 4-27-67

Compound No. 063-F, Oral Date Completed 3-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	16	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	2	2	2
No. mice negative (killed and died)	14	16	16	13
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	0	1	2	2
No. mice killed or died, other diseases	1	1	0	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma	2	0	0	0
Gastric papilloma	0	0	0	1
Total Number of Tumors	2	1	2	2
Common other Lesions Follicular hyperplasia (any site)	1	0	0	1
Lymphoid infiltrate (any site)	0	1	0	2
Focal hyperkeratosis (stomach)	0	1	0	0

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Signed: Borge Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/706

Compound Name 2,4-D Isopropyl Ester Date Killed 6-7-66

Compound No. 030-E, Subcutaneous Date Completed 9-7-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	16	16
No. mice missing (no necropsy or tissue missing)	1	0	0	1
No. mice died during experiment	1	0	2	1
No. mice negative (killed and died)	13	10	14	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	2	4	0	2
No. mice killed or died, other diseases	2	4	4	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Leiomyoma, uterus	0	1	0	0
Fibroma, tail	0	0	0	1
Total Number of Tumors	2	4	0	3
Common other Lesions				
Pneumonitis	1	0	1	2
Hyperplastic nodules, spleen	1	0	1	0
Hydrometra	0	5	0	0
Pulmonary edema	0	0	2	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/706

Compound Name 2,4-D Isopropyl ester Date Killed 12/13/66

Compound No. 030-F, Oral Date Completed 10/17/67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	14
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	1	4
No. mice negative (killed and died)	12	15	10	12
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	5	2	2	2
No. mice killed or died, other diseases	1	1	5	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin with pulmonary metastases	0	0	0	1
Other types				
Total Number of Tumors	6	2	3	3
Common other Lesions				
Focal pneumonia	1	0	4	1
Cystic ovary	0	1	0	0
Follicular hyperplasia	0	1	1	2

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Signed: Borge M. Uiland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/707

Compound Name 2,4-D Butyl Ester Date Killed 6-7-66

Compound No. 031-G, Subcutaneous Date Completed 11-29-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	16
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	0	0	0	2
No. mice negative (killed and died)	14	17	18	14
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	0	0	1
No. mice killed or died, other diseases	0	1	0	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	0	1
Common other Lesions				
Cystic endometritis	0	1	0	3

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Signed: J.B.M. Innes

Dr. J.B.M. Innes

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/707

Compound Name 2,4-D Butyl Ester Date Killed 1-19-67

Compound No. 031-F, Oral Date Completed 11-22-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	1	1	0	2
No. mice negative (killed and died)	12	12	13	14
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	3	4	3	0
No. mice killed or died, other diseases	3	1	2	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	3	2	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	2	0	0
Total Number of Tumors	3	6	3	0
Common other Lesions Focal pneumonia	3	0	2	0
Follicular hyperplasia	1	0	0	0
Lymphoid infiltrate	0	1	0	3

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/708

Compound Name 2,4-D Isoctyl ester Date Killed 7-6-66

Compound No. 032-D, Subcutaneous Date Completed 9-21-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	2	0	0
No. mice negative (killed and died)	10	4	14	10
No. mice died with tumors	2	1	0	0
No. mice killed with tumors	4	1	2	5
No. mice killed or died, other diseases	2	12	2	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	5
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin				
Other types				
Leiomyoma, bladder	0	0	0	1
Hematoma, splenic	1	0	0	0
Osteogenic Sarcoma	1	0	0	0
Total Number of Tumors	6	2	2	0
Common other Lesions				
Pneumonitis	1	0	1	1
Hyperplastic spleen	1	0	0	0
Ovarian cyst	0	1	0	0
Hydrometra	0	11	0	1

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Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/708

Compound Name 2,4-D Isoctyl ester Date Killed 1-12-67

Compound No. 032-F, Oral Date Completed 10-18-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	2	1	2
No. mice negative (killed and died)	11	8	13	12
No. mice died with tumors	0	1	1	1
No. mice killed with tumors	5	3	2	0
No. mice killed or died, other diseases	2	5	2	5
Tumors				
Leukemia (myeloid)	0	1	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	3	1	0
Pulmonary Carcinoma (Bronchogenic)	0	0	1	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Angioma, spleen	1	0	0	0
Gastric papilloma	0	1	0	0
Total Number of Tumors	7	5	3	1
Common other Lesions				
Follicular hyperplasia (spleen)	2	5	0	0
Lymphoid infiltrate (any organ)	1	0	0	0
Focal pneumonia	1	2	3	5
Focal gastritis	1	0	0	0
Fatty metamorphosis, liver	0	1	0	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/806

Compound Name a(2,5-Dichlorophenoxy) propionic acid Date Killed 9-20-66

Compound No. 146-E, Subcutaneous Date Completed 6-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	17	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	8	13	10	11
No. mice died with tumors	2	0	1	0
No. mice killed with tumors	3	0	2	1
No. mice killed or died, other diseases	4	5	5	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma (Bronchogenic)	0	0	1	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver or spleen	2	0	0	0
Total Number of Tumors	5	0	3	1
Common other Lesions				
Follicular hyperplasia, any site	2	0	0	4
Lymphoid infiltrate, any site	0	0	1	1
Focal pneumonia	1	4	4	3
Osteogenesis, spleen	1	0	0	0
Dilated pancreatic duct	1	0	0	0
Focal hemorrhage, liver	1	0	0	0
Metritis	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

ERL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/806

Compound Name A(2,5-Dichlorophenoxy)-propionic acid

Compound No. 146-F, Oral

Date Killed 5-24-67

Date Completed 6-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	15	17	18
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	6	2	1	0
No. mice negative (killed and died)	7	17	15	15
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	4	0	1	1
No. mice killed or died, other diseases	5	0	2	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	0	1	1
Common other Lesions Follicular hyperplasia - any site	5	0	1	1
Lymphoid infiltrate - any site	0	0	0	0
Focal pneumonia	0	0	0	1
Cyst, liver.	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/811

Compound Name 2- (2,4-DP) Date Killed 10-27-66

Compound No. 151-C, Subcutaneous Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	1
No. mice negative (killed and died)	9	12	12	10
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	1	2	0
No. mice killed or died, other diseases	6	5	4	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	1	0	0
Total Number of Tumors	4	1	2	0
Common other Lesions Lymphoid infiltrate - any site	3	4	4	7
Follicular hyperplasia - any site	2	0	0	0
Focal pneumonia	4	1	1	2
Chronic nephritis	1	0	0	0
Glomerular amyloidosis	1	0	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/811

Compound Name 2-(2,4-DP) Date Killed 5-11-67

Compound No. 151-H, Oral Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	17	17	12
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	7	1	1	6
No. mice negative (killed and died)	8	13	6	16
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	0	4	0
No. mice killed or died, other diseases	2	5	7	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	2	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma (Bronchogenic)	0	0	1	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Plasmacytic neoplasm	0	0	0	1
Total Number of Tumors	7	0	5	1
Common other Lesions Follicular hyperplasia - any site	5	2	2	0
Lymphoid infiltrate - any site	0	3	5	1
Focal pneumonia	0	0	3	0
Hepatitis	1	0	0	0
Osteogenesis spleen	1	0	0	0
Cystic ovary	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/805

Compound Name a(2,4-Dichlorophenoxy)-Propionic Acid Date Killed 9-20-66

Compound No. 145-E, Subcutaneous Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	1	1
No. mice negative (killed and died)	11	13	11	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	2	0
No. mice killed or died, other diseases	4	4	5	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno Mammary/Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	4	1	2	1
Common other Lesions Follicular hyperplasia - any site	2	0	1	2
Lymphoid infiltrate - any site	0	2	1	3
Focal pneumonia	3	2	3	1
Focal myocarditis	1	0	0	0
Cystic seminal vesicles	0	0	1	0
Hyperkeratosis, esophagus	0	0	0	1

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Signed: [signature]
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/805

Compound Name 2,4-Dichlorophenoxy-propionic acid Date Killed 5-4-67

Compound No. 145-E Oral Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	17	18
No. mice missing (no necropsy or tissue missing)	1	0	1	0
No. mice died during experiment	0	1	0	0
No. mice negative (killed and died)	13	11	14	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	3	2	5
No. mice killed or died, other diseases	2	4	1	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma (Adenocarcinoma)	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Angioma, liver	0	0	0	1
Leiomyoma, uterus	0	0	0	2
Total Number of Tumors	2	3	2	5
Common other Lesions				
Focal pneumonia	0	0	2	0
Follicular hyperplasia - any site	1	1	0	0
Lymphoid infiltrate - any site	0	1	0	3
Focal hyperkeratosis	1	1	0	0
Cystic endometritis	0	2	0	0
Focal gastritis	0	2	0	0
Ovarian thrombosis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/722

Compound Name 2,4,5-T Date Killed 7-26-66

Compound No. 061-D, Subcutaneous Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	17	17	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	7	1	1	0
No. mice negative (killed and died)	13	17	14	16
No. mice died with tumors	3	0	0	0
No. mice killed with tumors	1	1	4	2
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	1	4	2
Common other Lesions				

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Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/722

Compound Name 2,4,5 - T Date Killed 11-10-66

Compound No. 061-G, Oral Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	14	14
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	14	4	4
No. mice negative (killed and died)	5	10	11	13
No. mice died with tumors	0	0	1	2
No. mice killed with tumors	6	1	3	0
No. mice killed or died, other diseases	7	7	3	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Benign calcifying epithelioma	0	0	0	1
Total Number of Tumors	6	1	3	2
Common other Lesions				
Follicular hyperplasia - any site	1	0	0	0
Lymphoid infiltrate 4	4	5	0	1
Focal pneumonia	5	3	3	3
Cystic ovary	0	1	0	0
Cystic seminal vesicle	0	0	1	0
Granuloma, liver	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/755

Compound Name 2-(2'4'5' Trichlorophenoxy) propionic acid Date Killed 8-9-66

Compound No. 095-D, Subcutaneous Date Completed 1-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	11	17	17	18
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	6	1	1	0
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Hemangioma, liver	1	0	0	0
Hemangioma, spleen	1	0	0	0
Papilloma, gastric	0	1	0	0
Total Number of Tumors	7	1	1	0
Common other Lesions				

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Signed: [illegible]
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/755

Compound Name 2-(2'4'5'-Trichlorophenoxy)-propionic acid

Compound No. 095-F , Oral

Date Killed 1-19-67

Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	2
No. mice died during experiment	2	0	0	1
No. mice negative (killed and died)	8	13	14	7
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	7	4	1	1
No. mice killed or died, other diseases	1	1	3	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma (adeno-)	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Gastric papilloma	0	2	0	0
Cortical adenoma, adrenal	0	0	0	1
Total Number of Tumors	8	4	1	1
Common other Lesions Hyperkeratosis, stomach	1	0	0	0
Follicular hyperplasia - any site	1	1	0	2
Lymphoid infiltrate - any site	2	1	0	1
Hyperplastic	1	0	3	0
Focal pneumonia	0	0	0	5

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/802

Compound Name Gibberellic Acid Date Killed 9-13-66

Compound No. 142-B, Subcutaneous Date Completed 6-25-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	17	18
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	2	1	1	0
No. mice negative (killed and died)	6	9	14	14
No. mice died with tumors	1	1	1	0
No. mice killed with tumors	4	0	0	1
No. mice killed or died, other diseases	6	7	3	3
Tumors Lymphatic Leukemia (chronic)	1	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	1
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Massive sarcoma	0	0	1	0
Total Number of Tumors	5	1	1	1
Common other Lesions				
Follicular hyperplasia - any site	6	2	0	2
Lymphoid infiltrate - any site	2	1	1	3
Focal pneumonia	4	5	2	1
Steatitis, abdominal fat	0	1	0	0
Atrophic kidney	0	0	0	1

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/802

Compound Name Gibberellic Acid Date Killed 5-4-67

Compound No. 142-C, Oral Date Completed 6-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	16	17	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	6	2	1	3
No. mice negative (killed and died)	8	16	9	13
No. mice died with tumors	1	1	1	1
No. mice killed with tumors	3	0	7	0
No. mice killed or died, other diseases	6	1	1	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	0
Pulmonary Carcinoma	0	0	1	0
Hepatoma	2	0	4	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	4	1	8	1
Common other Lesions Focal pneumonia	0	0	1	2
Follicular hyperplasia - any site	3	0	0	0
Lymphoid infiltrate - any site	1	0	0	2
Fatty metamorphosis, liver	2	0	0	0
Focal necrosis, any site	1	0	0	0
Focal myocarditis	1	0	0	0
Cystic dilatation, kidney tubules	1	0	0	0
Cystic ovary	0	1	0	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/774

Compound Name Monochloroacetic acid Date Killed 7-28-66

Compound No. 114-E, Subcutaneous Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	17	17	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	5	1	1	1
No. mice negative (killed and died)	11	14	17	17
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	4	4	1	1
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	3	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	2	0	0	0
Total Number of Tumors	7	4	1	1
Common other Lesions				

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Signed: Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/774

Compound Name Monochloracetic acid Date Killed 3-23-67

Compound No. 114-F , Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	15	17	17
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	2	3	0	1
No. mice negative (killed and died)	11	15	15	13
No. mice died with tumors	1	1	0	1
No. mice killed with tumors	4	1	2	2
No. mice killed or died, other diseases	2	1	0	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	2	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Subcutaneous fibrosarcoma	0	0	0	1
Total Number of Tumors	6	2	2	3
Common other Lesions Follicular hyperplasia - any site	2	0	0	1
Lymphoid infiltrate	0	1	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/815

Compound Name CCC Date Killed 10-27-66

Compound No. 156-F, Subcutaneous Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	5	17	12	11
No. mice missing (no necropsy or tissue missing)	12	0	4	7
No. mice died during experiment	1	1	2	0
No. mice negative (killed and died)	5	13	12	5
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	0	0	0	0
No. mice killed or died, other diseases	1	4	2	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	0	1	0	0
Common other lesions Follicular hyperplasia - any site	0	0	0	1
Lymphoid infiltrate - any site	0	0	0	3
Focal pneumonia	1	2	2	2
Hyperkeratosis, stomach	0	1	0	0
Fatty metamorphosis, liver	0	1	0	0
Cystic endometritis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #440

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/815

Compound Name CCC Date Killed 5-11-67

Compound No. 156-G, Oral Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	18	14
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	0	0	0	3
No. mice negative (killed and died)	8	12	12	12
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	8	1	5	3
No. mice killed or died, other diseases	2	5	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	5	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Subcutaneous fibrosarcoma	0	0	0	1
Gastric papilloma	0	0	0	1
Angioma	1	0	0	0
Leiomyoma, uterus	0	1	0	1
Total Number of Tumors	8	1	6	4
Common other Lesions				
Follicular hyperplasia, any site	3	2	0	0
Lymphoid infiltrate, any site	3	1	0	1
~~Focal pneumonia~~	~~2~~	~~1~~	~~2~~	~~0~~
Osteogenesis, spleen	2	0	0	0
Pyometra	0	1	0	0
~~Focal necrosis, any site~~	~~2~~	~~0~~	~~0~~	~~0~~
Focal gastritis	0	1	0	0
Cystic endometritis	0	1	0	0
Focal hepatitis	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/784

Compound Name Calcium Cyanamide Date Killed 9-29-66

Compound No. 124-E, Subcutaneous Date Completed 4-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	12	17	14	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	1	0	0
No. mice killed or died, other diseases	2	0	4	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	1	0	0
Common other Lesions				
Follicular hyperplasia - any site	2	0	0	0
Lymphoid infiltrate - any site	0	0	0	2
Focal pneumonia	1	0	4	0
Hydronephrosis	0	1	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/784

Compound Name Calcium Cyanamide Date Killed 4-6-67

Compound No. 124-E, Oral Date Completed 4-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	3	0	0	1
No. mice negative (killed and died)	6	5	12	10
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	8	9	3	2
No. mice killed or died, other diseases	3	4	3	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	3	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	3	0	0	0
Gastric papilloma	2	7	0	0
Total Number of Tumors	13	10	3	2
Common other Lesions				
Follicular hyperplasia - any site	2	0	0	2
Lymphoid infiltrate - any site	2	2	0	3
Focal pneumonia	0	0	4	2
Hyperkeratosis, stomach	1	2	0	0
Cystic ovary	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/780

Compound Name Phenylmercuric acetate Date Killed 8-23-66

Compound No. 120-F, Subcutaneous Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	9	14	14	9
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	4	0	2	1
No. mice killed or died, other diseases	3	4	2	
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	5	0	2	1
Common other Lesions Cysticercus, liver	1	0	0	0
Follicular hyperplasia - any site	2	1	0	2
Lymphoid infiltrate - any site	2	2	1	5
Focal pneumonia	1	2	0	3
Chronic nephritis	0	0	1	0
Testicular abscess	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/780

Compound Name Phenyl mercuric acetate Date Killed 3-23-67

Compound No. 120-H, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	1	1
No. mice negative (killed and died)	15	12	17	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	2	1	0
No. mice killed or died, other diseases	1	4	0	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	2	0	0
Renal adenoma	0	0	1	0
Total Number of Tumors	2	4	2	0
Common other Lesions Follicular hyperplasia - any site	0	0	0	0
Lymphoid infiltrate - any site	1	0	0	3
Focal pneumonia	0	0	0	0
Focal gastritis	1	3	0	0
Focal hyperkeratosis, stomach	0	1	0	0
Cystic endometritis	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/775

Compound Name Cacodylic acid Date Killed 7-28-66

Compound No. 115 - C, Subcutaneous Date Completed 4-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	10	18	14	15
No. mice missing (no necropsy or tissue missing)	0	0	2	0
No. mice died during experiment	8	0	2	3
No. mice negative (killed and died)	9	11	12	13
No. mice died with tumors	2	0	1	1
No. mice killed with tumors	2	2	2	2
No. mice killed or died, other diseases	5	5	1	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Malignant lymphoma	1	0	0	0
Mesenchymal tumor, liver	1	0	0	0
Leiomyosarcoma, uterus	0	0	0	1
Total Number of Tumors	4	2	3	3
Common other Lesions Follicular hyperplasia - any site	1	2	0	2
Lymphoid infiltrate - any site	1	2	0	2
Focal pneumonia	4	2	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/775

Compound Name Cacodylic acid Date Killed 3-9-67

Compound No. 115 - F, Oral Date Completed 3-19-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	17	16
No. mice missing (no necropsy or tissue missing)	4	0	0	0
No. mice died during experiment	7	0	1	2
No. mice negative (killed and died)	9	17	17	12
No. mice died with tumors	2	0	0	2
No. mice killed with tumors	1	0	1	1
No. mice killed or died, other diseases	2	1	0	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	3	0	1	4
Common other Lesions				
Focal pneumonia	1	1	1	0
Follicular hyperplasia - any site	1	0	0	3
Lymphoid infiltrate - any site	0	0	0	1
Focal myocarditis	1	0	0	0
Glomerular sclerosis, kidney	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/712

Compound Name Dowcide-7 Date Killed 7-26-66

Compound No. 050-F, Subcutaneous Date Completed 12-16-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	0	0	2
No. mice negative (killed and died)	11	16	15	15
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	2	2	2
No. mice killed or died, other diseases	1	0	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hemangioma, liver	1	0	0	0
Leiomyoma, uterus	0	0	0	1
Subcutaneous spindle cell sarcoma	0	0	0	1
Total Number of Tumors	6	2	2	3
Common other Lesions				
Nephritis	1	0	0	0
Subcutaneous phycomycosis	0	0	1	0

Signed: J. M. Innes

Dr. J. M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/712

Compound Name Dowcide-7 Date Killed 8-9-66

Compound No. 050-F, Oral Date Completed 11-29-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	2	0	0	2
No. mice negative (killed and died)	13	14	14	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	4	3	2
No. mice killed or died, other diseases	2	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma, uterus	0	1	0	0
Hemangioma, spleen	0	1	0	0
Hemangioma, liver	0	0	1	0
Total Number of Tumors	3	4	3	2
Common other Lesions				
Subcutaneous phycomycosis	1	0	0	0
Pericarditis and mediastinitis	1	0	0	0

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Signed: Glenn Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/744

Compound Name 2,3,4,6 - Tetrachlorophenol Date Killed 7-26-66

Compound No. 084-E, Subcutaneous Date Completed 12-14-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	10	16	12	15
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	1	2	3
No. mice killed or died, other diseases	0	1	4	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	7	1	2	3
Common other Lesions				
Cystic pancreatic duct	0	1	0	0
Pneumonia	0	0	4	0

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Signed: J. R. M. Innes
Dr. J. R. M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/757

Compound Name 2,4,6- Trichlorophenol

Date Killed 9-7-66

Compound No. 097-C, Subcutaneous

Date Completed 1-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	0	0
No. mice negative (killed and died)	17	17	18	17
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	0	1
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	1	1	0	1
Common other lesions				

Signed: [signature]

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/757

Compound Name 2,4,6 Trichlorophenol Date Killed 3-11-67

Compound No. 097-E, Oral Date Completed 11-6-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	10	16	16	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	8	2	2	1
No. mice negative (killed and died)	4	9	15	15
No. mice died with tumors	3	2	1	0
No. mice killed with tumors	6	5	2	2
No. mice killed or died, other diseases	5	2	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	2	2	0
Pulmonary Carcinoma	1	0	0	0
Hepatoma	3	2	1	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Malignant lymphoma	0	1	0	0
Angioma (spleen)	0	1	0	0
Hemangioma (liver)	0	0	1	0
Total Number of Tumors	10	8	4	2
Common other Lesions Focal pneumonia	2	1	0	0
Follicular hyperplasia (spleen)	4	1	0	1
Lymphoid infiltration (any organ)	3	1	1	0
Nephritis (chronic)	1	0	0	0
Renal infarct	1	0	0	0
Hydrosalpinx	0	2	0	0

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Signed: Borge M. Ullland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/804

Compound Name 2,4,5 - Trichlorophenol Date Killed 9-13-66

Compound No. 144-B, Subcutaneous Date Completed 7-10-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	11	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	7	0	0
No. mice negative (killed and died)	10	15	11	11
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	0	2	3
No. mice killed or died, other diseases	7	3	5	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	0	2	3
Common other Lesions Subcutaneous abscess	0	0	1	0
Follicular hyperplasia, spleen	3	1	0	2
Lymphoid hyperplasia, lungs	1	0	0	0
Focal pneumonitis	3	2	2	0
Lymphoid nodule	0	0	1	0
Pulmonary edema	0	0	1	1
Lymphoid infiltration, lungs	0	0	0	4

Signed: Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/801

Compound Name Vancide BB Date Killed 9-7-66

Compound No. 141-H, Subcutaneous Date Completed 6-26-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	18	14
No. mice missing (no necropsy or tissue missing)	1	0	0	2
No. mice died during experiment	3	1	0	2
No. mice negative (killed and died)	10	17	12	12
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	0	1	0
No. mice killed or died, other diseases	3	1	5	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	0	0	1	0
Total Number of Tumors	4	0	2	0
Common other Lesions				
Follicular hyperplasia - any site	1	0	0	0
Lymphoid infiltrate - any site	2	0	2	1
Focal pneumonia	1	1	3	2
Hydronephrosis	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66 801

Compound Name Vancide BB Date Killed 5-4-67

Compound No. 141-J, Oral Date Completed 2-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	18	16	16
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	5	0	2	2
No. mice negative (killed and died)	9	11	15	15
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	4	5	2	2
No. mice killed or died, other diseases	2	2	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	3
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Gastric papilloma	0	5	0	0
Total Number of Tumors	5	5	2	3
Common other Lesions				
Follicular hyperplasia (any organ)	2	0	1	0
Focal hyperkeratosis - stomach	1	1	0	0
Fat necrosis (abdominal fat)	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/787

Compound Name Vancide BL Date Killed 8-25-66

Compound No. 127-B, Subcutaneous Date Completed 4-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	0	0	0
No. mice negative (killed and died)	14	11	13	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	3	0	1
No. mice killed or died, other diseases	1	4	5	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Fibrosarcoma	0	1	0	0
Total Number of Tumors	3	3	0	1
Common other Lesions				
Hyperkeratosis, stomach	1	0	0	0
Follicular hyperplasia - any site	1	2	0	1
Lymphoid infiltrate- any site	0	0	0	3
Focal pneumonia	0	2	3	2
Cystic endometritis	0	1	0	0
Cystic ovary	0	1	0	0
Cysticercus, liver	0	0	1	0
Hydronephrosis	0	0	0	0

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Signed: Borge M. Ulland

BRL Fm. #449

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/787

Compound Name Vancide BL Date Killed 4-6-67

Compound No. 127-F, Oral Date Completed 4-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	15	15	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	3	3	1
No. mice negative (killed and died)	7	10	16	13
No. mice died with tumors	1	1	1	1
No. mice killed with tumors	7	4	0	4
No. mice killed or died, other diseases	3	3	1	0
Tumors				
Lymphatic Leukemia	1	0	0	0
Reticulum Cell Sarcoma, Type A	4	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	1	0	1
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	4	0	0
Angioma liver	1	0	0	0
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	8	6	1	5
Common other Lesions				
Follicular hyperplasia - any site	3	1	0	0
Lymphoid infiltrate - any site	1	1	0	0
Focal pneumonia	1	0	0	0
Cystic ovary	0	3	0	0
Hyperkeratosis, stomach	1	1	0	0
Focal gastritis	1	0	0	0
Focal necrosis, liver	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/817

Compound Name Tetrafidon Date Killed 11-1-66

Compound No. 158-B, Subcutaneous Date Completed 6-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	18	18
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	2	1	0	0
No. mice negative (killed and died)	7	13	9	14
No. mice died with tumors	0	0	0	0
No. mice kil'ed with tumors	3	0	4	0
No. mice killed or died, other diseases	7	4	5	4
Tumors				
Lymphatic Leukemia (chronic)	1	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	4	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	0	4	0
Common other Lesions				
Follicular hyperplasia - any site	5	0	1	0
Lymphoid infiltrate - any site	1	2	2	3
Focal pneumonia	4	3	3	0
Osteogenesis, spleen	1	0	0	0
Cystic ovary	0	0	0	1
Polyposis, uterus	0	0	0	1

Signed: Borge M. Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/817

Compound Name Tetrafidon Date Killed 5-11-67

Compound No. 158-E, Oral Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	1	0	2
No. mice negative (killed and died)	10	13	14	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	5	1	2	3
No. mice killed or died, other diseases	2	4	2	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	5	1	2	4
Common other Lesions				
Follicular hyperplasia, any site	2	0	0	1
Lymphoid infiltrate, any site	2	2	1	1
Focal pneumonia	0	1	0	1
Cystic endometritis	0	1	0	0
Cystic seminal vesicle	0	0	1	0
Ovarian abscess	0	0	0	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/807

Compound Name Ovex Date Killed 10-25-66

Compound No. 147-B, Subcutaneous Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	1
No. mice died during experiment	1	2	0	1
No. mice negative (killed and died)	9	1	10	7
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	1	3	3	1
No. mice killed or died, other diseases	7	13	5	9
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	1	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Total Number of Tumors	1	4	3	1
Common other Lesions Follicular hyperplasia - any site	1	0	1	0
Lymphoid infiltrate - any site	2	2	2	5
Focal pneumonia	4	3	1	4
Chronic nephritis	1	0	0	0
Cystic endometritis	0	15	0	3
Osteogenesis , spleen	1	0	0	0
Cystic seminal vesicle	0	0	2	0

Signed: [signature]

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/807

Compound Name Ovex Date Killed 5-24-67

Compound No. 147-C, Oral Date Completed 7-2-68

NOTE: Possible liver damage with recovery and regeneration and lipid metamorphosis nearly all livers.

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	5	0	0	0
No. mice negative (killed and died)	5	5	11	14
No. mice died with tumors	3	0	0	0
No. mice killed with tumors	6	8	3	2
No. mice killed or died, other diseases	4	5	4	1
Tumors				
Leukemia, Myeloid	1	0	0	[illegible]
Reticulum Cell Sarcoma, Type A	4	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	1	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	8	0	0
Angioma, spleen and liver	2	0	0	0
Total Number of Tumors	11	9	3	2
Common other Lesions				
Follicular hyperplasia - any site	1	2	0	0
Lymphoid infiltrate - any site	1	0	0	0
Focal pneumonia	0	0	0	1
Focal necrosis, liver	4	0	2	0
Telangiectasis, liver	1	0	4	0
Dilatation kidney tubules	1	0	0	0
Hyperkeratosis, stomach	0	3	0	0
Hydrometra	0	1	0	0

Signed:

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/822

Compound Name Genite-R99 Date Killed 11-1-66

Compound No. 165-B, Subcutaneous Date Completed 6-20-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	0	1
No. mice negative (killed and died)	10	13	15	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	7	0	1	3
No. mice killed or died, other diseases	1	5	2	3
Tumors				
Lymphatic Leukemia (chronic)	2	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	4
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	8	0	1	4
Common other Lesions				
Follicular hyperplasia - any site	3	0	0	0
Lymphoid infiltrate - any site	0	0	0	1
Focal pneumonia	2	2	2	1
Osteogenesis, spleen	2	0	0	0
Focal necrosis	1	0	0	0
Cystic endometritis	0	2	0	1
Pyometra	0	1	0	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/822

Compound Name GENITE - R99 Date Killed 5-18-67

Compound No. 165-B, ORAL Date Completed 6-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	18	17
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	0	1	0	1
No. mice negative (killed and died)	8	12	11	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	2	4	4
No. mice killed or died, other diseases	2	3	3	5
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	3	1	0	1
Reticulum Cell Sarcoma, Type B	0	0		0
Pulmonary Adenoma	2	1	4	1
Pulmonary Carcinoma	0	0	0	1
Hepatoma	6	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, colon	0	0	0	1
Total Number of Tumors	11	2	4	4
Common other Lesions Follicular hyperplasia, any site	1	1	0	4
Lymphoid infiltrate, any site	6	1	0	0
Focal pneumonia	1	0	5	1
Fatty metamorphosis, liver	1	0	0	0
Hydrometra	0	1	0	0
Hydronephrosis	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/754

Compound Name Karathane Date Killed 7-12-66

Compound No. 094-H, Subcutaneous Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	13	16	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	5	2	2
No. mice negative (killed and died)	12	14	15	13
No. mice died with tumors	2	0	2	0
No. mice killed with tumors	3	1	1	5
No. mice killed or died, other diseases	1	3	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	3	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	4
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Benign fibroma, inoculation site	1	0	0	0
Total Number of Tumors	5	1	3	6
Common other Lesions				
Fatty liver	1	3	0	0

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Signed: [signature]

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/754

Compound Name Karathane Date Killed 2/16/67

Compound No. 094-K Oral Date Completed 3/12/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	14	13	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	4	5	3
No. mice negative (killed and died)	8	10	12	10
No. mice died with tumors	2	2	0	0
No. mice killed with tumors	3	1	3	0
No. mice killed or died, other diseases	5	5	3	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	2	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	1	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	5	3	4	0
Common other Lesions Lymphoid infiltrate - any site	1	2	1	5
Follicular Hyperplasia- any site	1	2	0	2
Testicular fibrosis	1	0	0	0
Focal pneumonia	2	6	3	3
Microabscess, thymus	0	0	1	0
Granuloma, uterus	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/761

Compound Name 2-sec-butyl-4,6-dinitrophenol Date Killed 8-23-66

Compound No. 101-G , Subcutaneous Date Completed 6-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	1
No. mice negative (killed and died)	9	16	9	14
No. mice died with tumors	3	0	0	0
No. mice killed with tumors	4	0	1	0
No. mice killed or died, other diseases	3	2	9	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, intestinal wall	1	0	0	0
Total Number of Tumors	8	0	2	0
Common other Lesions				
Aspiration pneumonia	3	1	8	4
Lymphocytic infiltrate, kidney	0	1	0	0

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Signed: Marion G. Valerio

Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/761

Compound Name 2-Sec-Butyl-4,6-dinitrophenol Date Killed 5-11-67

Compound No. 101-J, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	14
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	0	0	0	4
No. mice negative (killed and died)	10	11	11	15
No. mice died with tumors	0	0	0	2
No. mice killed with tumors	7	4	6	0
No. mice killed or died, other diseases	1	3	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, liver	1	0	0	0
Gastric papilloma	0	3	0	0
Total Number of Tumors	8	4	6	2
Common other Lesions Follicular hyperplasia - any site	0	0	0	0
Lymphoid infiltrate - any site	0	1	0	0
Focal pneumonia	1	1	1	2
Focal gastritis	0	1	0	0
Cystic endometritis	0	1	0	0
Aveolar phagocytic pneumonia	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/753

Compound Name BOTRAN Date Killed 9-7-66

Compound No. 093-B, Subcutaneous Date Completed 5-5-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	4	0	1	2
No. mice negative (killed and died)	10	10	12	7
No. mice died with tumors	2	0	0	2
No. mice killed with tumors	0	0	1	3
No. mice killed or died, other diseases	6	8	4	6
Tumors Lymphatic Leukemia	2			1
Reticulum Cell Sarcoma, Type A				3
Reticulum Cell Sarcoma, Type B				
Pulmonary Adenoma			1	
Pulmonary Carcinoma				
Hepatoma				
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Gastric papilloma				1
Total Number of Tumors	2	0	1	5
Common other Lesions Pneumonia	3	6	4	2
Follicular hyperplasia, spleen	5			1
Lymphoid infiltration lung, kidney	1	1		4
Acute metritis		1		

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Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/753

Compound Name Botran Date Killed 1-19-67

Compound No. 093-D, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	16	17
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	1	1	2	0
No. mice negative (killed and died)	12	8	12	10
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	8	3	0
No. mice killed or died, other diseases	3	1	3	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Adenoma, adrenal cortex	0	1	0	0
Angioma, liver	1	0	0	0
Gastric papilloma	0	4	0	0
Leiomyosarcoma, uterus	0	1	0	0
Total Number of Tumors	4	8	3	0
Common other Lesions Follicular hyperplasia - any site	0	0	0	1
Lymphoid infiltrate - any site	1	2	1	2
Focal pneumonia	2	4	2	5
Cystic ovary	0	1	0	0
Ovarian thrombus	0	0	0	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/788

Compound Name 2,6-Dichloro-4-nitroaniline Date Killed 10-18-66

Compound No. 128-B, Subcutaneous Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	15	18	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	3	0	0
No. mice negative (killed and died)	5	16	11	12
No. mice died with tumors	3	0	0	0
No. mice killed with tumors	4	0	1	0
No. mice killed or died, other diseases	5	2	6	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other Types Angioma, liver or spleen	1	0	0	0
Malignant Lymphoma	0	0	1	0
Total Number of Tumors	7	0	1	0
Common other Lesions Follicular hyperplasia - any site	5	0	1	2
Lymphoid infiltrate - any site	2	0	1	4
Focal pneumonia	1	2	4	2
Focal hemorrhages testicle	1	0	0	0
Focal necrosis, liver	1	0	0	0
Polyposis, cecum	1	0	0	0
Osteogenesis, spleen	1	0	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/788

Compound Name 2,6 Dichloro-4 Nitroaniline Date Killed 4-6-67

Compound No. 128-D, Oral Date Completed 6-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	18	16
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	3	2	0	2
No. mice negative (killed and died)	7	12	17	12
No. mice died with tumors	2	0	0	2
No. mice killed with tumors	6	4	1	3
No. mice killed or died, other diseases	3	1	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	1	1	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyosarcoma, uterus with metastasis.	0	0	0	2
Fibrosarcoma	1	0	0	0
Angioma, liver or spleen	1	0	1	0
Gastric papilloma	0	1	0	0
Total Number of Tumors	8	4	1	5
Common other Lesions Follicular hyperplasia, any site	2	0	0	0
Lymphoid infiltrate, any site	2	1	0	1
Focal pneumonia	2	0	0	3
Abdominal steatitis	1	0	0	0
Dilated pancreatic ducts	1	0	0	0
Cystic seminal vesicles	1	0	0	0
Focal gastritis	0	1	0	0
Pyometra	0	1	0	0
Focal necrosis, liver	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/741

Compound Name Vancide, PB Date Killed 8-25-66

Compound No. 081-H, Subcutaneous Date Completed 1-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	16	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	7	1	0	1
No. mice negative (killed and died)	12	17	15	14
No. mice died with tumors	4	0	0	1
No. mice killed with tumors	2	0	3	3
No. mice killed or died, other diseases	0	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	0	0	4
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hemangioma, spleen	1	0	0	0
Gastric papilloma	0	0	0	1
Total Number of Tumors	6	0	3	5
Common other Lesions				

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Signed: John Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. ~~66-0741~~

Compound Name Vancide PB Date Killed 1-19-67

Compound No. 081, Oral Date Completed 3/7/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	17	17	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	7	1	1	0
No. mice negative (killed and died)	9	17	16	11
No. mice died with tumors	2	1	0	0
No. mice killed with tumors	5	0	2	2
No. mice killed or died, other diseases	1	0	0	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	6	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	7	1	2	2
Common other Lesions Follicular Hyperplasia- any site	1	0	0	0
Lymphoid Infiltrate - any site	1	0	0	1
Focal pneumonia	0	0	0	2
Hyperkertosis - stomach	0	0	0	1
Glomerular sclerosis - kidneys	0	0	0	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/721

Compound Name PCNB Date Killed 9-29-66

Compound No. 060-B, subcutaneous Date Completed 8-14-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	0	1
No. mice negative (killed and died)	12	12	10	14
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	4	5	1	1
No. mice killed or died, other diseases	3	3	7	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	3	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	1
Pulmonary Carcinoma	0	1	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Adenocarcinoma	0	0	0	1
Total Number of Tumors	5	6	1	2
Common other Lesions Focal pneumonia	1	1	6	0
Arteritis, heart vessels	1	0	0	0
Follicular hyperplasia, spleen	1	1	0	1
Acute pneumonia	0	1	0	0
Lymphoid infiltration, lung	0	0	1	1

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/721

Compound Name PCNB Date Killed 9-6-66

Compound No. 060-C, Oral Date Completed 5-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	16	17
No. mice missing (no necropsy or tissue missing)	0	0	1	1
No. mice died during experiment	4	0	1	0
No. mice negative (killed and died)	8	3	3	5
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	4	5	11	2
No. mice killed or died, other diseases	5	10	3	10
Tumors Lymphatic Leukemia	1	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	4	10	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Necrotic hepatoma near gallbladder			1	
Total Number of Tumors	6	5	13	2
Common other Lesions Pneumonia	4	10	10	5
Follicular hyperplasia, spleen	3	1	2	1
Lymphoid infiltration, lung & liver	2	6	3	5
Lymphoid infiltration, kidney	1	3	0	1
Hydrosalpinx	0	2	0	1
Cystic endometritis	0	1	0	1
Cystic ovary	0	1	0	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/733

Compound Name Chloranil Date Killed 9-27-66

Compound No. 073-C, Subcutaneous Date Completed 11-22-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	18	18
No. mice missing (no necropsy or tissue missing)	2	0	0	0
No. mice died during experiment	1	1	0	0
No. mice negative (killed and died)	11	13	16	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	0	0	0
No. mice killed or died, other diseases	4	5	2	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	1	0	0	0
Common other Lesions Focal pneumonia	3	1	2	0
Follicular hyperplasia	1	2	0	1
Cystic endometritis	0	2	0	0
Hydrosalpinx	0	1	0	0
Lymphoid infiltration, (any organ)	0	0	0	3
Lymphoid nodule (liver)	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/733

Compound Name Chloranil Date Killed 12-13-66

Compound No. 073-D, Oral Date Completed 11-22-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	16	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	1	2	1
No. mice negative (killed and died)	2	6	9	8
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	9	2	3	1
No. mice killed or died, other diseases	5	10	5	8
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	7	2	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	12	2	5	2
Common other Lesions				
Focal pneumonia	11	9	4	7
Follicular hyperplasia	1	0	0	0
Fatty metamorphosis, liver	1	0	0	0
Lymphoid infiltration (any organ)	0	1	1	2
Hydrosalpinx	0	1	0	0
Fatty metamorphosis, liver	0	0	3	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/736

Compound Name Dichlone Date Killed 9-27-66

Compound No. 076-G, Subcutaneous Date Completed 1-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	17	16
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	3	2	1	2
No. mice negative (killed and died)	6	14	14	12
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	6	2	0	1
No. mice killed or died, other diseases	5	1	3	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	6	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyosarcoma, uterus with metastasis	0	1	0	0
Total Number of Tumors	7	3	0	1
Common other Lesions Focal pneumonia	1	0	3	4
Follicular hyperplasia, spleen	3	1	0	0
Lymphoid infiltrate, liver	1	0	1	0
Osseous metaplasia (spleen)	1	0	0	0
Hematoma, ovary	0	1	0	0
Cystic ovary	0	0	0	1
Hypoplasia, kidney	0	0	0	

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/736

Compound Name Dichlone Date Killed 1-12-67

Compound No. 076-H, Oral Date Completed 1-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	7	12	18	14
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	5	3	0	2
No. mice killed or died, other diseases	5	3	0	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	2	0	0
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	3	1	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	7	3	0	2
Common other Lesions				
Follicular hyperplasia, spleen	6	1	0	1
Osseous metaplasia, spleen	1	0	0	
Lymphoid infiltrate - any organ	1	3	0	1
Focal pneumonia	1	0	0	1
Focal necrosis, liver	1	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/765

Compound Name Anthraquinone Date Killed 10-6-66

Compound No. 105-B, Subcutaneous Date Completed 2-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	15	16
No. mice missing (no necropsy or tissue missing)	0	0	4	0
No. mice died during experiment	1	1	2	2
No. mice negative (killed and died)	11	14	10	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	0	0	0
No. mice killed or died, other diseases	3	4	6	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen.	1	0	0	0
Total Number of Tumors	4	0	0	0
Common other Lesions Follicular hyperplasia	2	0	1	2
Lymphoid infiltrate, lung	0	1	2	1
Focal pneumonia	1	1	5	0
Intracellular pigmentation, lung, spleen.	1	0	0	0
Cysticercus fasciolaris, liver	0	1	0	0
Cystic pancreatic ducts	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/765

Compound Name Anthraquinone Date Killed 2-16-67

Compound No. 105-C, Oral Date Completed 1-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	14	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	4	4	0	2
No. mice negative (killed and died)	10	12	13	9
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	1	2	0	2
No. mice killed or died, other diseases	6	4	5	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	2	0	3
Common other Lesions Pneumonia (focal or acute)	4	3	3	2
Follicular hyperplasia	1	0	0	1
Lymphoid infiltrate, any organ	1	1	3	4
Focal necrosis (liver)	1	0	0	0

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Signed: Borge M. Olland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/746

Compound Name FOLPET Date Killed 9-27-66

Compound No. 086-B, Subcutaneous Date Completed 2-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	0	1	2
No. mice negative (killed and died)	14	16	18	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	0	0	3
No. mice killed or died, other diseases	2	2	0	3
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Lipoma	0	0	0	1
Total Number of Tumors	1	0	0	3
Common other Lesions Follicular hyperplasia	2	1	0	0
Nephritis	1	0	0	0
Lymphoid infiltrate, any organ	0	2	0	3
Focal pneumonia	0	0	0	3

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/0746

Compound Name Folpet Date Killed 1-12-67

Compound No. 086, Oral Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	17	16	13
No. mice missing (no necropsy or tissue missing)	0	0	0	3
No. mice died during experiment	0	1	2	2
No. mice negative (killed and died)	10	15	14	10
No. mice died with tumors	0	1	1	1
No. mice killed with tumors	5	1	1	0
No. mice killed or died, other diseases	3	1	2	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types	0	0	0	0
Total Number of Tumors	5	2	2	1
Common other Lesions Focal pneumonia	4	1	0	2
Lymphoid infiltrate - any site	0	0	2	2

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/702

Compound Name CAPTAN Date Killed 10-11-66

Compound No. 026-B, Subcutaneous Date Completed 7-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	16	17
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	3	1	1	1
No. mice negative (killed and died)	11	8	13	10
No. mice died with tumors	2	1	0	1
No. mice killed with tumors	2	2	0	2
No. mice killed or died, other diseases	3	7	4	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types Pleomorphic subcutaneous sarcoma	1	0	0	0
Sarcoma	0	1	0	0
Total Number of Tumors	4	3	0	3
Common other lesions Follicular hyperplasia, Peyers Patch	0	0	0	1
Focal pneumonia	3	4	3	1
Cystic ovary	0	1	0	0
Cystic endometritis	0	1	0	0
Lymphoid infiltration, kidney	0	1	0	0
Lymphoid infiltration, lung	0	0	1	4
Follicular hyperplasia, spleen	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/702

Compound Name Captan Date Killed 9-22-66

Compound No. 026-D, Oral Date Completed 6-26-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	15	16	16
No. mice missing (no necropsy or tissue missing)	2	0	1	1
No. mice died during experiment	4	3	1	1
No. mice negative (killed and died)	3	9	4	11
No. mice died with tumors	1	2	1	0
No. mice killed with tumors	6	1	4	1
No. mice killed or died, other diseases	8	7	11	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	2	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	8	3	6	2
Common other Lesions				
Follicular hyperplasia, spleen	2	0	0	3
Lymphoid infiltration, kidney	1	1	0	3
Focal pneumonia	4	5	11	1
Atrophic seminal vesicle	1	0	0	0
Chronic nephritis	0	0	0	0
Focal gastritis	0	1	0	0

Signed: [signature]
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/739

Compound Name Nabam Date Killed 7-6-66

Compound No. 079-H, Subcutaneous Date Completed 12-13-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	2	0	0	1
No. mice negative (killed and died)	14	16	17	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	0	1
No. mice killed or died, other diseases	3	1	0	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hepatic carcinoma with metastasis to kidney	1	0	0	0
Leiomyoma	0	0	0	1
Total Number of Tumors	1	1	0	1
Common other Lesions				
Hyperplastic spleen	2	0	0	0
Cystic endometritis	0	1	0	0
Pneumonitis	0	0	0	1
Hyperplastic Malphigian corpuscles, spleen	0	0	0	1

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Signed: Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/739

Compound Name Nabam Date Killed 8-2-66

Compound No. 079-G, Oral Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	13	18	18
No. mice missing (no necropsy or tissue missing)	2	2	0	0
No. mice died during experiment	3	5	0	0
No. mice negative (killed and died)	13	16	17	18
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	0	1	0
No. mice killed or died, other diseases	1	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	1	0
Common other Lesions Abscess	1	0	0	0

Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/711

Compound Name SDDC Date Killed 7-19-66

Compound No. 049-C, Subcutaneous Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	2
No. mice negative (killed and died)	13	18	16	18
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	0	2	0
No. mice killed or died, other diseases	2	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hemangioma, spleen	1	0	0	0
Papilloma, stomach	0	0	1	0
Total Number of Tumors	3	0	3	0
Common other Lesions				
Hyperplastic spleen	1	0	0	0
Focal necrosis, liver	1	0	0	0

Signed: John Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/711

Compound Name SDDC Date Killed 7-28-66

Compound No. 049-D, ORAL Date Completed 11-30-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	0	0	0	2
No. mice negative (killed and died)	6	16	8	14
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	10	1	6	3
No. mice killed or died, other diseases	1	1	4	1
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	0	1	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	5	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	7	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Sebaceous adenoma, skin	1	0	0	0
Papilloma, stomach	0	0	0	1
Total Number of Tumors	11	1	6	3
Common other Lesions Nephritis	1	0	0	0
Cystic ovary	0	1	0	0
Pneumonitis	0	0	2	0
Lymphocytic infiltration, lungs	0	0	1	0
Subcutaneous phycomycosis	0	0	1	0
Hyperplastic spleen	0	0	0	1

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Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/827

Compound Name Bis-(2-hydroxyethyl)-dithiocarbamic acid (Potassium Salt)

Compound No. 170-C, Subcutaneous

Date Killed 11-8-66

Date Completed 6-26-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	15	17	18
No. mice missing (no necropsy or tissue missing)	1	2	1	0
No. mice died during experiment	3	1	0	0
No. mice negative (killed and died)	11	14	10	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	1	1	3
No. mice killed or died, other diseases	2	1	5	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Gastric papilloma	1	0	0	0
Total Number of Tumors	4	1	1	3
Common other Lesions				
Follicular hyperplasia - any site	1	0	2	1
Lymphoid infiltrate - any site	0	0	1	4
Focal pneumonia	3	1	5	1
Chronic nephritis	1	0	0	0
Cystic ovary	0	1	0	0
Mesenteric granuloma	0	0	1	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/827

Compound Name Bis-(2-hydroxyethyl)-dithiocarbamic acid (Potassium salt)

Compound No. 170-C, Oral

Date Killed 5-24-67

Date Completed 6-26-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	15	16
No. mice missing (no necropsy or tissue missing)	1	0	1	1
No. mice died during experiment	3	1	2	1
No. mice negative (killed and died)	3	4	3	8
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	12	13	13	6
No. mice killed or died, other diseases	0	1	1	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	13	12	13	3
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Subcutaneous fibrosarcoma	1	0	0	0
Total Number of Tumors	16	13	14	7
Common other Lesions				
Follicular hyperplasia - any site	3	0	3	0
Lymphoid infiltrate - any site	3	1	0	1
Focal pneumonia	0	0	0	0
Steatitis, renal fat	0	1	0	0
Fatty metamorphosis, liver	0	1	0	3
Focal gastritis	0	1	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/783

Compound Name Vanguard GF Date Killed 9-27-66

Compound No. 123-F, Subcutaneous Date Completed 4-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	16	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	2	0
No. mice negative (killed and died)	13	10	12	7
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	0	2	1	2
No. mice killed or died, other diseases	4	6	5	9
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	0	0	1
Total Number of Tumors	1	2	2	2
Common other Lesions Follicular hyperplasia - any site	2	4	0	2
Lymphoid infiltrate - any site	2	1	2	5
Focal pneumonia	1	0	3	2
Pancreatic atrophy	0	1	0	0
Cystic ovary	0	1	0	0
Cysticercus liver	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. ~~66/783~~

Compound Name Vanguard GF Date Killed 4-6-67

Compound No. 123-E, Oral Date Completed 4-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	17	15	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	5	1	3	2
No. mice negative (killed and died)	11	14	15	11
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	3	3	1	2
No. mice killed or died, other diseases	3	1	1	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	1	0	0
Total Number of Tumors	5	3	2	3
Common other Lesions Follicular hyperplasia - any site	1	0	0	2
Lymphoid infiltrate - any site	1	1	1	1
Chronic nephritis.	1	0	0	0
Cystic pancreatic duct	1	0	0	0
Focal pneumonia	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/723

Compound Name FERBAM Date Killed 10-13-67

Compound No. 062-E, Subcutaneous Date Completed 8-14-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	1	0	2
No. mice negative (killed and died)	5	10	6	9
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	1	1	1
No. mice killed or died, other diseases	9	7	12	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	1	0	0	0
Angioma, spleen	0	0	1	0
Total Number of Tumors	5	1	1	2
Common other Lesions Focal pneumonia	7	3	7	3
Follicular hyperplasia, spleen	1	0	0	0
Lymphoid infiltrate, lung	1	3	5	4
Subcutaneous abscess	2	0	0	0
Cystic endometritis	0	1	0	0
Focal hemorrhage, lung	0	0	0	1

Signed: Borge M Olland
Borge M Olland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/723

Compound Name Ferbam Date Killed 11-10-66

Compound No. 062-H, Oral Date Completed 8-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	16	15
No. mice missing (no necropsy or tissue missing)	1	2	0	0
No. mice died during experiment	2	0	2	3
No. mice negative (killed and died)	7	6	6	13
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	7	2	4	0
No. mice killed or died, other diseases	6	8	12	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	4	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	7	2	5	1
Common other Lesions				
Fibrosis, seminal vesicle	0	0	1	0
Focal pneumonia	4	7	9	2
Follicular hyperplasia, spleen	2	0	1	0
Lymphoid infiltrate, lung and kidney	1	0	0	2
Myocarditis	1	0	0	0
Acute pneumonia	1	0	0	0
Subcutaneous abscess	1	0	0	0
Follicular hyperplasia, Peyer's patch	0	1	0	0
Cystic node	0	0	1	0

Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/800

Compound Name Vanguard N Date Killed 10-25-66

Compound No. 140-B, Subcutaneous Date Completed 6-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	14	16	16
No. mice missing (no necropsy or tissue missing)	0	3	1	0
No. mice died during experiment	4	2	2	2
No. mice negative (killed and died)	12	12	12	12
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	3	1	1	0
No. mice killed or died, other diseases	2	2	3	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	4	1	2	1
Common other Lesions				
Follicular hyperplasia - any site	1	0	0	2
Lymphoid infiltrate - any site	0	0	1	1
Focal pneumonia	1	2	3	2
Cystic endometritis	0	0	0	1

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Signed: Jorge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/800

Compound Name Vanguard N Date Killed 7-13-67

Compound No. 140-F, Oral Date Completed 6-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18		
No. mice surviving 18 months	12	3		
No. mice missing (no necropsy or tissue missing)	0	0		
No. mice died during experiment	6	15		
No. mice negative (killed and died)	15	16		
No. mice died with tumors	0	1		
No. mice killed with tumors	0	1		
No. mice killed or died, other diseases	3	0		
Tumors				
Lymphatic Leukemia	0	0		
Reticulum Cell Sarcoma, Type A	0	0		
Reticulum Cell Sarcoma, Type B	0	0		
Pulmonary Adenoma	0	2		
Pulmonary Carcinoma	0	0		
Hepatoma	0	0		
Hepatic Carcinoma with Pulmonary metastases	0	0		
Mammary Carcinoma	0	0		
Carcinoma, skin	0	0		
Other types				
Total Number of Tumors	0	2		
Common other Lesions				
Focal pneumonia	2	0		
Lymphoid infiltrate - any site	1	0		

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/800

Compound Name Vanguard-N Date Killed 11/16/67

Compound No. 140-N, Oral Date Completed 3/11/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	16	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	1	2	1
No. mice negative (killed and died)	7	3	14	14
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	7	9	3	3
No. mice killed or died, other diseases	4	5	1	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	3	3
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	4	8	0	0
Total Number of Tumors	9	9	3	3
Common other Lesions Focal gastritis	3	2	0	0
Hyperkeratosis (stomach)	2	3	0	0
Follicular hyperplasia (any organ)	1	1	0	1
Lymphoid infiltrate (any organ)	1	0	0	0
Hydrosalpinx	0	2	0	0
Cystic pancreatic duct	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/728

Compound Name Telluric Date Killed 10-13-66

Compound No. 068-B, subcutaneous Date Completed 9-28-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	17	15
No. mice missing (no necropsy or tissue missing)	3	0	0	2
No. mice died during experiment	1	1	1	1
No. mice negative (killed and died)	9	13	14	4
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	1	2	4
No. mice killed or died, other diseases	5	5	2	8
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma	1	0	0	0
Leiomyoma	0	0	0	1
Total Number of Tumors	3	1	2	5
Common other Lesions				
Focal pneumonia	3	0	1	4
Follicular hyperplasia (any organ)	2	2	1	2
Lymphoid infiltrate	0	3	0	2
Cystic ovary	0	1	0	0
Telangiectasis (liver)	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/728

Compound Name Tellurac Date Killed 11-10-66

Compound No. 068-F, Oral Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	15	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	0	3	0
No. mice negative (killed and died)	3	12	8	8
No. mice died with tumors	1	0	1	0
No. mice killed with tumors	8	2	5	6
No. mice killed or died, other diseases	5	4	4	4
Tumors				
Lymphatic Leukemia	0	1	0	0
Reticulum Cell Sarcoma, Type A	3	0	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	2	5
Pulmonary Carcinoma (Bronchogenic)	1	0	0	0
Hepatoma	4	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Fibrosarcoma	0	0	1	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	9	2	8	7
Common other Lesions				
Focal pneumonia	4	3	4	2
Follicular hyperplasia - any site	3	0	0	1
Lymphoid infiltrate - any site	2	0	0	1
Chronic nephritis	1	0	0	0
Cystic ovary	0	1	0	0
Subcutaneous abscess	0	0	1	0
Cystic endometritis	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/759

Compound Name Cumate Date Killed 9-22-66

Compound No. 099-F Subcutaneous Date Completed 4-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	1	1	0
No. mice negative (killed and died)	11	13	10	15
No. mice died with tumors	1	1	1	0
No. mice killed with tumors	0	1	1	1
No. mice killed or died, other diseases	6	3	6	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	0
Reticulum Cell Sarcoma, Type B	0	1	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	1	2	2	1
Common other Lesions				
Follicular hyperplasia - any site	4	0	1	0
Lymphoid infiltr[illegible] - any site	1	1	4	1
Acute hepatitis	1	0	0	0
Focal pneumonia	2	2	2	1
Focal gastritis	1	0	0	0
Cystic kidneys	1	0	0	0

30-C

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/759

Compound Name Cumate Date Killed 11-16-67

Compound No. 099-F, Oral Date Completed 3-21-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	14	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	4	0
No. mice negative (killed and died)	10	11	15	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	6	6	2	1
No. mice killed or died, other diseases	2	1	1	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	2	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Bronchogenic carcinoma	0	0	0	1
Other types				
Gastric papilloma	2	4	0	0
Angioma, spleen	1	0	0	0
Total Number of Tumors	7	6	3	1
Common other Lesions				
Follicular hyperplasia - any site	2	0	1	0
Lymphoid infiltrate - any site	0	0	0	1
Focal gastritis	1	0	0	0
Abdominal abscess	0	1	0	0
Hyperkeratosis, stomach	0	1	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/796

Compound Name ETHYL CADMATE Date Killed 10-20-66

Compound No. 136-B, Subcutaneous Date Completed 6-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	17	17
No. mice missing (no necropsy or tissue missing)	0	1	1	0
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	11	12	10	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	1	4	2
No. mice killed or died, other diseases	4	4	3	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	1
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	4	1	5	2
Common other Lesions Follicular hyperplasia, any site	1	0	0	0
Lymphoid infiltrate, any site	1	1	0	3
Focal pneumonia	4	4	3	2
Focal hepatitis	1	0	0	0

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/796

Compound Name Ethyl Cadmate Date Killed 4-6-67

Compound No. 136-G, Oral Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	16	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	0	2	1	1
No. mice negative (killed and died)	11	5	16	11
No. mice died with tumors	0	2	1	0
No. mice killed with tumors	7	7	1	3
No. mice killed or died, other diseases	0	4	0	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	6	1	0
Angioma	2	0	0	0
Cystadenoma	0	1	0	0
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	9	9	2	3
Common other Lesions				
Lymphoid infiltrate - any site	1	0	0	0
Follicular hyperplasia - any site	1	0	0	1
Focal gastritis	0	3	0	0
Parasitic invasion of stomach wall	0	6	0	0
Hepatitis	0	1	0	0
Focal pneumonia	0	0	0	1
Uterine abscess	0	0	0	1

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/748

Compound Name Ledate Date Killed 10-13-66

Compound No. 088-B, Subcutaneous Date Completed 2-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	0	3
No. mice negative (killed and died)	11	11	8	9
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	2	2	1
No. mice killed or died, other diseases	4	5	8	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	2	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	2	2	1
Common other Lesions Focal pneumonia	3	3	5	3
Focal hyperkeratosis, stomach	1	0	0	0
Follicular hyperplasia	1	0	0	2
Lymphoid infiltrate	0	3	3	4

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/748

Compound Name Ledate Date Killed 2/15/67

Compound No. o88, Oral Date Completed 3/25/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	18
No. mice missing (no necropsy or tissue missing)	2	0	1	0
No. mice died during experiment	0	2	0	0
No. mice negative (killed and died)	2	13	14	14
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	7	0	2	0
No. mice killed or died, other diseases	7	4	1	4
Tumors				
Lymphatic Leukemia	1	0	0	0
Reticulum Cell Sarcoma, Type A	5	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Giant cell bone tumor	0	1	0	0
Total Number of Tumors	7	1	2	0
Common other Lesions				
Focal pneumonia	3	1	1	2
Follicular hyperplasia - any site	5	0	0	0
Lymphoid infiltrate - any site	0	2	0	2
Glomerular sclerosis	1	0	0	0
Purulent metritis	0	1	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/793

Compound Name Methyl Selenac Date Killed 10-18-66

Compound No. 133-C. Subcutaneous Date Completed 5-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	15	18	17
No. mice missing (no necropsy or tissue missing)	3	3	0	1
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	7	12	13	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	2	0	1
No. mice killed or died, other diseases	5	1	5	7
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
[illegible]gioma, spleen	1	1	0	0
Total Number of Tumors	3	2	0	1
Common other Lesions				
Focal pneumonia	3	1	5	2
Follicular hyperplasia, any site	3	0	0	2
Lymphoid infiltrate, any site	2	0	0	4
Chronic nephritis	1	0	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/793

Compound Name Methyl Selenac Date Killed 4-27-67

Compound No. 133-H, Oral Date Completed 6-26-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	17	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	1
No. mice died during experiment	5	1	0	1
No. mice negative (killed and died)	8	11	14	13
No. mice died with tumors	3	0	0	0
No. mice killed with tumors	1	1	1	3
No. mice killed or died, other diseases	6	5	3	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	2
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	1
Renal adenoma	0	0	1	0
Total Number of Tumors	4	1	1	3
Common other Lesions Focal gastritis	4	3	1	0
Follicular hyperplasia - any site	5	1	0	1
Lymphoid infiltrate - any site	0	1	0	1
Focal pneumonia	0	0	0	0
Hydronephrosis	0	0	1	0
Osteogenesis, spleen	1	0	0	0
Focal hyperkeratosis, stomach	0	1	0	0
Mesenteric cyst	0	1	0	0
Chronic nephritis	0	0	1	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/789

Compound Name Ethyl Selenac Date Killed 10-18-66

Compound No. 129-C, Subcutaneous Date Completed 5-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	17	18	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	1	0	0
No. mice negative (killed and died)	10	4	13	8
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	4	2	0	2
No. mice killed or died, other diseases	3	11	5	8
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	4	3	0	2
Common other Lesions				
~~Lymphoid infiltrate, any site~~	2	7	1	8
Follicular hyperplasia, any site	2	2	0	1
Focal pneumonia	1	4	4	2
Focal necrosis, liver	0	1	0	0
Subcutaneous granuloma	1	0	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/789

Compound Name Ethyl Selenac Date Killed 4-6-67

Compound No. 129-H, Oral Date Completed 5-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	14	17	14
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	2	4	1	4
No. mice negative (killed and died)	2	3	11	11
No. mice died with tumors	2	2	0	2
No. mice killed with tumors	14	6	5	2
No. mice killed or died, other diseases	0	6	2	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	2	1	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	11	3	3	0
Hepatic Carcinoma with Pulmonary metastases	1	0	0	0
Mammary Adeno Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Sebaceous gland adenoma, subcutaneous	1	0	0	0
Gastric papilloma	0	2	0	0
Total Number of Tumors	16	8	7	4
Common other Lesions				
Lymphoid infiltrate, any site	1	0	0	2
Follicular hyperplasia, any site	1	0	0	0
Focal pneumonia	2	0	3	1
Focal hyperkeratosis, stomach	1	2	1	0
Sialoadenitis	1	0	0	0
Gastric abscess	1	0	0	0
Cystic endometritis	0	1	0	0
Focal gastritis	0	3	0	0
Hepatitis	1	0	0	0
Cecal polyps	0	0	1	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/742

Compound Name Bismate Date Killed 10-11-66

Compound No. 082-B, Subcutaneous Date Completed 2-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	1	1
No. mice negative (killed and died)	11	14	10	12
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	3	1	4	1
No. mice killed or died, other diseases	2	3	4	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Malignant lymphoma	1	0	0	0
Angioma, liver	0	1	0	0
Total Number of Tumors	6	1	4	2
Common other lesions				
Follicular hyperplasia	2	1	0	1
Lymphangiectasis, inguinal node	1	0	0	0
Focal pneumonia	0	2	3	3
Hydronephrosis	0	1	0	0
Renal cyst	0	0	1	0
Lymphoid infiltrate, lung	0	0	1	2

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/742

Compound Name Bismate Date Killed 2-2-67

Compound No. 082-H, Oral Date Completed 4-4-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	7	0	0	0
No. mice negative (killed and died)	10	17	12	9
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	3	0	3	2
No. mice killed or died, other diseases	3	1	3	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Angioma, spleen	1	0	0	0
Total Number of Tumors	5	0	3	2
Common other Lesions				
Follicular hyperplasia - any site	0	0	1	0
Lymphoid infiltrate - any site	1	0	1	0
Focal pneumonia	4	1	2	7
Hyperplastic malpighian corpuscle-spleen	1	0	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/785

Compound Name Butyl Zimate Date Killed 10-11-66

Compound No. 125-P, Subcutaneous Date Completed 4/8/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	7	11	15	10
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	0	1	2
No. mice killed or died, other diseases	8	7	2	6
Tumors				
Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Total Number of Tumors	3	0	1	2
Common other Lesions				
Follicular hyperplasia - any site	4	1	1	1
Lymphoid infiltrate - any site	5	3	0	4
Focal pneumonia	1	2	2	2
Vascular ectasia, spleen	1	0	0	0
Cystic ovary	0	1	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/785

Compound Name Butyl Zimate Date Killed 4-20-67

Compound No. 125-B, Oral Date Completed 4-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	2	0	1
No. mice negative (killed and died)	8	9	13	11
No. mice died with tumors	3	2	0	0
No. mice killed with tumors	5	3	2	3
No. mice killed or died, other diseases	2	4	3	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	3
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Subcutaneous fibrosarcoma	1	1	0	0
Gastric papilloma	0	2	0	0
Total Number of Tumors	8	5	2	3
Common other Lesions				
Follicular hyperplasia - any site	1	1	0	0
Lymphoid infiltrate - any site	1	1	3	3
Focal pneumonia	2	0	0	2
Cystic ovary	0	1	0	0
Focal gastritis	0	1	0	0
Cystic granuloma, mesentery	1	0	0	0

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/730

Compound Name Ethyl Zimate

Date Killed 10-11-66

Compound No. 070-C, Subcutaneous

Date Completed 2-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	16	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	4	1	0	1
No. mice negative (killed and died)	6	6	10	13
No. mice died with tumors	2	1	0	1
No. mice killed with tumors	4	4	2	0
No. mice killed or died, other diseases	6	6	6	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	1	1	0
Leiomyosarcoma, uterus	0	1	0	0
Total Number of Tumors	6	6	2	1
Common other Lesions Follicular hyperplasia	4	1	0	1
Focal pneumonia	5	2	5	0
Lymphoid infiltrate, any organ	2	3	1	3
Cystic ovary	0	1	0	0
Hemorrhagic ovary	0	1	0	0
Hydronephrosis	0	0	0	1

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/730

Compound Name Ethyl Zimate Date Killed 1-19-67

Compound No. 070-E, Oral Date Completed 1-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	17	13
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	3	1	1	5
No. mice negative (killed and died)	8	13	12	16
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	0	5	1
No. mice killed or died, other diseases	4	4	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	1	0
Mammary Carcinoma				
Carcinoma, skin				
Other types				
Leiomyosarcoma	0	0	0	1
Total Number of Tumors	6	0	6	2
Common other Lesions				
Follicular hyperplasia	3	0	0	0
Lymphoid infiltration	1	0	0	0
Pneumonia	4	4	0	0
Subcutaneous granuloma	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/792

Compound Name Methyl Zimate Date Killed 10-18-66

Compound No. 132-F, Subcutaneous Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	13
No. mice missing (no necropsy or tissue missing)	0	0	1	3
No. mice died during experiment	2	1	0	3
No. mice negative (killed and died)	11	15	10	11
No. mice died with tumors	0	1	0	2
No. mice killed with tumors	4	0	1	1
No. mice killed or died, other diseases	3	2	6	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Leiomyoma, uterus	0	1	0	0
Total Number of Tumors	5	1	1	3
Common other Lesions				
Follicular hyperplasia - any site	4	0	0	0
Lymphoid infiltrate - any site	0	0	0	0
Focal pneumonia	0	1	3	1
Cystic ovary	0	1	0	0
Cystic seminal vesicle	0	0	3	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/792

Compound Name Methyl Zimate Date Killed 4-27-67

Compound No. 132-I, Oral Date Completed 6-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	12	9	11	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	6	5	0
No. mice killed or died, other diseases	2	3	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	3	0
Pulmonary Carcinoma	1	0	1	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric Papilloma	1	5	0	0
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	4	6	6	0
Common other Lesions Focal pneumonia	1	1		0
Lymphoid infiltrate - any site	1	0	0	1
Follicular hyperplasia - any site	0	0	0	2
Focal hyperkeratosis	0	2	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/713

Compound Name ZINEB Date Killed 9-15-66

Compound No. 051-B, Subcutaneous Date Completed 8-14-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	0	0	0
No. mice negative (killed and died)	6	11	7	10
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	2	3	3
No. mice killed or died, other diseases	8	7	9	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Total Number of Tumors	7	2	3	3
Common other lesions				
Focal pneumonia	3	3	7	1
Lymphoid infiltrate, kidney	2	1	0	3
Follicular hyperplasia, spleen	2	3	0	1
Lymphoid infiltrate, lung	2	0	0	1
Cystic ovary	0	2	0	0
Hydrosalpinx	0	1	0	0
Follicular hyperplasia, Peyer's patch	0	0	3	0

Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/713

Compound Name ZINEB Date Killed 12-15-66

Compound No. 051-C, Oral Date Completed 11-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	16	16
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	3	0	1	2
No. mice negative (killed and died)	10	10	5	8
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	2	4	2
No. mice killed or died, other diseases	2	6	7	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver, spleen, mesentery	1	0	0	0
Gastric papilloma	0	1	0	0
Total Number of Tumors	6	2	4	3
Common other Lesions Focal pneumonia	2	4	8	2
Follicular hyperplasia (spleen)	2	0	0	2
Subcutaneous phycomycosis	3	0	0	0
Lymphoid infiltrate (any organ)	0	4	1	6
Focal hyperkeratosis (gastric)	0	2	0	0
Focal gastritis	0	2	0	0
Splenic infarct	0	0	0	1
Liver and fat necrosis	0	0	0	2
Mycotic granuloma	1	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/717

Compound Name MANEB Date Killed 9-15-66

Compound No. 056-E, Subcutaneous Date Completed 7-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	11	17	13	11
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	0	1	2
No. mice killed or died, other diseases	5	1	5	5
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	0	1	3
Common other Lesions				
Focal gastritis with hyperkeratosis	1	0	0	0
Follicular hyperplasia, spleen	3	0	0	0
Focal pneumonia	3	0	4	5
Lymphoid infiltrate, lung	0	0	3	0
~~Pulmonary edema~~	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/717

Compound Name MANEB Date Killed 1-19-67

Compound No. 056-F, Oral Date Completed 11-22-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	15	18	18
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	2	3	0	0
No. mice negative (killed and died)	8	12	10	12
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	2	1	4	5
No. mice killed or died, other diseases	8	4	4	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	2
Total Number of Tumors	2	1	4	5
Common other Lesions				
Focal pneumonia	6	2	3	0
Follicular hyperplasia	1	0	0	0
Necrotizing arteritis	1	0	0	0
Pyelonephritis	1	0	0	0
Lymphoid infiltration	0	2	1	1

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/803

Compound Name Dimethyldithiocarbamic acid-dimethylammonium salt

Compound No. 143-C. Subcutaneous

Date Killed 7-28-66

Date Completed 6-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	16
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	2	1	1	2
No. mice negative (killed and died)	9	14	14	12
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	4	1	1	2
No. mice killed or died, other diseases	5	2	2	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Osteogenic sarcoma	0	0	1	0
Total Number of Tumors	4	1	2	3
Common other Lesions				
Follicular hyperplasia - any site	4	0	0	2
Lymphoid infiltrate - any site	1	2	0	1
Focal pneumonia	3	0	2	2
Osteogenesis, spleen	2	0	0	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/803

Compound Name Dimethyldithiocarbamic Acid dimethylammonium salt

Compound No. 143-E, Oral

Date Killed 5-24-67

Date Completed 6-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	1	0	1
No. mice negative (killed and died)	8	14	9	9
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	6	2	4	1
No. mice killed or died, other diseases	2	2	5	7
Tumors				
Myelogenous leukemia with spleen, lung, liver infiltrate	1	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	1
Reticulum Cell Sarcoma, Type B with Metastases	1	0	0	0
Pulmonary Adenoma	3	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	1	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen.	1	0	0	0
Angioma, liver	0	0	0	1
Total Number of Tumors	9	2	4	3
Common other Lesions				
Follicular hyperplasia - any site	1	1	1	1
Lymphoid infiltrate - any site	0	1	2	6
Focal Pneumonia	0	0	2	1
Focal necrosis, liver	2	0	0	0
Fatty metamorphosis, liver	1	0	0	0
Hepatic congestion	1	0	0	0
Chronic glomerulonephritis	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/751

Compound Name SULFADS Date Killed 10-13-66

Compound No. 091-B, Subcutaneous Date Completed 2-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	9	13	12	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	3	0	0
No. mice killed or died, other diseases	6	2	6	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin				
Other types				
Gastric papilloma	2	1	0	0
Total Number of Tumors	3	3	0	1
Common other Lesions				
Follicular hyperplasia	2	0	0	1
Lymphoid infiltrate, lung	2	0	2	3
Focal pneumonia	4	3	3	2
Tapeworm cyst	0	0	1	0
Hydronephrosis	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/751

Compound Name SULFADS Date Killed 3-9-67

Compound No. 091-E, Oral Date Completed 3-1-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	15
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	2	0	0	3
No. mice negative (killed and died)	10	12	13	9
No. mice died with tumors	1	0	0	2
No. mice killed with tumors	3	3	1	2
No. mice killed or died, other diseases	4	3	3	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	3	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	7	3	1	4
Common other Lesions Focal pneumonia	3	0	3	2
Follicular hyperplasia	1	0	0	1
Lymphoid infiltration , any organ	1	1	0	5
Hepatic necrosis	1	0	0	0
Cystic endometritis	0	2	0	0
Testicular atrophy	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/794

Compound Name Ethyl Tuads Date Killed 10-20-66

Compound No. 134-B, Subcutaneous Date Completed 5-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	18
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	7	9	9	9
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	2	3	4
No. mice killed or died, other diseases	7	6	6	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	1	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Subcutaneous fibrosarcoma	1	0	0	0
Leiomyosarcoma, uterus	0	0	0	1
Total Number of Tumors	4	2	3	4
Common other Lesions Follicular hyperplasia - any site	5	2	0	1
Lymphoid infiltrate - any site	4	5	0	5
Focal pneumonia	2	2	8	2
Focal necrosis, liver	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/794

Compound Name Ethyl - Tuads Date Killed 4-20-67

Compound No. 134-E, Oral Date Completed 4-12-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	7	15
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	3	0	9	3
No. mice negative (killed and died)	5	12	2	13
No. mice died with tumors	1	0	8	1
No. mice killed with tumors	9	4	5	1
No. mice killed or died, other diseases	2	2	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	5	1	1	1
Pulmonary Carcinoma	0	1	0	0
Hepatoma	8	1	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Subcutaneous fibrosarcoma	0	0	10	0
Squamous cell carcinoma	0	0	1	0
Total Number of Tumors	15	4	15	2
Common other Lesions Fatty metamorphosis, liver	2	0	0	0
Lymphoid infiltrate - any site	1	2	2	2
Follicular hyperplasia - any site	0	0	1	0
Focal pneumonia	0	0	1	1

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/719

Compound Name Thiram

Compound No. 058-F Subcutaneous

Date Killed 10-6-66

Date Completed 5-17-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice on study	18	18	18	18
No. mice surviving 18 months	16	16	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	2	1	1
No. mice necropsied (killed and died)	10	12	14	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	3	1	3	2
No. mice killed or died, other diseases	5	5	1	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	1	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types	0	0	0	0
Total Number of Tumors	3	1	3	2
Common other Lesions				
Focal pneumonitis	2	2	0	1
Follicular hyperplasia spleen	2	1	0	0
Focal necrosis, liver	0	1	0	0
Pulmonary edema	0	0	1	2
Granuloma	1	0	0	0

Signed: Dr. J.R.M. Innes

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/719

Compound Name Thiram Date Killed 1-12-67

Compound No. 058-H, Oral Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	3
No. mice negative (killed and died)	10	14	13	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	0	3	1
No. mice killed or died, other diseases	5	4	2	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	0	3	1
Common other Lesions Follicular hyperplasia - any site	1	0	1	3
Lymphoid infiltrate - any site	0	0	0	3
Focal pneumonia	3	3	1	2
Hydronephrosis	1	0	0	0
Cystic ovary	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/735

Compound Name UNADS Date Killed 7-6-66

Compound No. 075-E, Subcutaneous Date Completed 12-12-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	18	18
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	14	17	14	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	0	4	2
No. mice killed or died, other diseases	1	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	3	0	4	2
Common other Lesions Nephritis with fibrosis	1			

Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/735

Compound Name UNADS Date Killed 12-6-66

Compound No. 075-E, Oral Date Completed 1-9-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	17	17
No. mice missing (no necropsy or tissue missing)	1	1	1	0
No. mice died during experiment	0	1	0	1
No. mice negative (killed and died)	4	13	14	12
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	0	1	3
No. mice killed or died, other diseases	8	4	2	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	6	0	1	4
Common other Lesions				
Focal pneumonia	5	2	2	2
Follicular hyperplasia	2	3	0	0
Lymphoid infiltration	2	1	0	0
Focal gastritis or hyperkeratosis stomach	2	0	0	0
Subcutaneous abscess	1	0	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/758

Compound Name Avadex Date Killed 9-6-66

Compound No. 098-B, Subcutaneous Date Completed 12-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	15
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	11	16	16	13
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	5	2	2	2
No. mice killed or died, other diseases	1	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Papilloma, gastric	1	0	1	0
Hemangioma, spleen	1	0	0	0
Squamous cell sarcoma	0	0	0	1
Total Number of Tumors	6	2	2	2
Common other Lesions				
Vascular ectasia	1	0	0	0
Mycotic granuloma, subcutaneous	0	0	0	1

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Signed: J.R.M. Innes
Dr. J.R.M. Innes

BRL Fm. 9449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/758

Compound Name Avadex Date Killed 3/9/67

Compound No. 098-D, Oral Date Completed 3/12/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	16	16	14
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	2	1	2	4
No. mice negative (killed and died)	1	8	3	11
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	13	6	12	4
No. mice killed or died, other diseases	2	3	3	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	4	2	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	13	2	10	1
Hepatic Carcinoma with Pulmonary metastases	0	1	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	1	0	2
Fibrosarcoma (metastasizing)	1	0	0	0
Adenoma, kidney	0	0	1	0
Total Number of Tumors	19	7	15	4
Common other Lesions				
Focal pneumonia	1	0	6	2
Follicular hyperplasia - any site	2	1	0	1
Lymphoid infiltrate - any site	1	1	0	1
Hyperkeratosis- stomach	0	1	0	0
Cystic endometritis	0	2	0	0
Acute hepatitis	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/747

Compound Name Tillam 6-E Date Killed 7-12-66

Compound No. 087-H, Subcutaneous Date Completed 12-14-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	1	0	0
No. mice negative (killed and died)	10	16	14	16
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	7	0	2	2
No. mice killed or died, other diseases	0	1	2	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Fibrosarcoma	0	1	0	0
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	8	1	1	2
Common other Lesions				
Cystic ovary	0	1	0	0
Pneumonitis	0	0	1	0
Cystic seminal vesicle	0	0	1	0
Hydronephrosis	0	0	0	1
Granuloma, skin	0	0	1	0

Signed: Jan Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/747

Compound Name TILLAM 6-E Date Killed 1-12-67

Compound No. 087-E, Oral Date Completed 2-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	6	15	10	15
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	12	3	7	3
No. mice negative (killed and died)	13	14	7	11
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	1	2	2	2
No. mice killed or died, other diseases	3	1	8	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	2	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Adenoma, renal pelvis	1	0	0	0
Leiomyoma	0	1	0	0
Total Number of Tumors	3	3	2	2
Common other Lesions Focal pneumonia	2	1	3	3
Myocarditis	1	0	5	0
Fatty metamorphosis, liver	0	1	0	0
Lymphoid infiltrate	0	1	1	1
Follicular hyperplasia	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. ~~66/813~~

Compound Name ETU Date Killed 9-8-66

Compound No. 153-B, Subcutaneous Date Completed 6-27-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	17	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	1	2
No. mice negative (killed and died)	9	15	15	16
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	3	0	1	1
No. mice killed or died, other diseases	6	3	2	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	00	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	1	0	0	0
Total Number of Tumors	3	0	1	1
Common other Lesions Follicular hyperplasia - any site	5	0	1	1
Lymphoid infiltrate - any site	1	0	0	1
Focal pneumonia	2	2	1	1
Osteogenesis, spleen	1	0	0	0
Hematoma, ovary	0	1	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/813

Compound Name ETU Date Killed 5-4-67

Compound No. 153-D, Oral Date Completed 6-25-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	13
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	4	0	0	4
No. mice negative (killed and died)	4	0	0	3
No. mice died with tumors	0	0	0	3
No. mice killed with tumors	14	18	18	9
No. mice killed or died, other diseases	0	0	0	1
Tumors				
Lymphatic Leukemia (chronic)	0	1	3	2
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	3	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	14	18	18	9
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, uterus	0	0	0	1
Angioma, uterus	0	1	0	0
Renal carcinoma	0	0	2	0
Undifferentiated sarcoma	0	0	0	1
Total Number of Tumors	15	23	25	15
Common other Lesions				
Follicular hyperplasia - any site	0	0	0	0
Lymphoid infiltrate - any site	2	4	0	1
Focal pneumonia	1	2	0	0
Mesenteric granuloma	1	0	0	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/716

Compound Name Dodine Date Killed 10-11-66

Compound No. 054-B, Subcutaneous Date Completed 8-8-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	2	0	1
No. mice negative (killed and died)	9	10	9	10
No. mice died with tumors	0	2	0	1
No. mice killed with tumors	6	0	2	0
No. mice killed or died, other diseases	4	6	7	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	1	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Seminoma	1	0	0	0
Angioma, Spleen	2	0	0	0
Spindle cell sarcoma	0	1	0	0
Total Number of Tumors	6	2	2	1
Common other Lesions Focal pneumonia	2	4	6	3
Follicular hyperplasia, spleen	1	1	0	0
Mesenteric abscess	1	0	0	0
Lymphoid infiltrate, lung	0	2	0	4
Cystic seminal vesicle	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/716

Compound Name Dodine Date Killed 2-2-67

Compound No. 054-G, Oral Date Completed 11-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	14	16	17
No. mice missing (no necropsy or tissue missing)	0	3	2	0
No. mice died during experiment	3	4	2	1
No. mice negative (killed and died)	7	10	10	12
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	5	1	3	2
No. mice killed or died, other diseases	5	4	3	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	1	0	0
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Angioma	1	0	0	0
Bronchogenic carcinoma	0	0	1	0
Leiomyosarcoma with metastases	0	0	0	1
Total Number of Tumors	8	2	3	2
Common other Lesions				
Focal pneumonia	3	1	3	1
Follicular hyperplasia (any organ)	2	0	0	1
Fatty metamorphosis (liver)	0	1	0	0
Cystic ovary	0	1	0	0
Focal gastric hyperkeratosis	0	1	0	0
Testicular atrophy	0	0	1	0
Lymphoid infiltrate (any organ)	0	0	0	1

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/771

Compound Name Dihydroacetic Acid Date Killed 8-18-66

Compound No. 111-F, Subcutaneous Date Completed 3-19-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	1
No. mice negative (killed and died)	9	7	12	14
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	1	1	1
No. mice killed or died, other diseases	6	10	5	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	1	1	0
Common other Lesions Follicular hyperplasia - any site	3	4	0	1
Lymphoid infiltrate - any site	2	3	1	3
Focal pneumonia	4	3	3	0
Focal hyperkeratosis - stomach	0	1	0	0
Testicular atrophy	0	0	1	0
Granuloma, spleen	0	0	0	1

Signed: Borge M. Ulland

BRL Fm. #449

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/771

Compound Name Dihydroacetic acid Date Killed 2-16-67

Compound No. 111-L, Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	1	1
No. mice negative (killed and died)	15	17	15	14
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	0	0	1	2
No. mice killed or died, other diseases	2	1	2	2
Tumors Lymphatic Leukemia (chronic)	0	0	0	
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	1	0	1	2
Common other Lesions				
Follicular hyperplasia - any site	2	0	1	2
Lymphoid infiltrate - any site	0	1	1	0

3-12

Signed: [signature]
Borge M Ulland, D.V.M

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/778

Compound Name Copper 8-hydroxyquinoline Date Killed 10-13-66

Compound No. 118-B, Subcutaneous Date Completed 2-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	16	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	2	0	1
No. mice negative (killed and died)	7	12	10	12
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	8	2	0	4
No. mice killed or died, other diseases	3	3	8	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	6	1	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Angioma, uterus	0	1	0	0
Carcinoma, uterus	0	0	0	1
Total Number of Tumors	8	3	0	5
Common other Lesions				
Follicular hyperplasia	2	0	1	0
Focal pneumonia	4	2	6	1
Lymphoid infiltrate , lung	0	1	0	1
Cystic ovary	0	1	0	0
Amyloidosis, liver	0	0	1	0

Signed: Borge M Ulland

Borge M Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/778

Compound Name Copper 8-hydroxy quinoline Date Killed 3-9-67

Compound No. 118-B, Oral Date Completed 2-7-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	17	17	18
No. mice missing (no necropsy or tissue missing)	0	0	1	0
No. mice died during experiment	7	1	0	0
No. mice negative (killed and died)	16	16	14	12
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	1	0	3	3
No. mice killed or died, other diseases	1	1	0	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Cavernous angioma	0	1	0	0
Total Number of Tumors	1	1	3	3
Common other Lesions				
Follicular hyperplasia, spleen	1	0	0	0
Lymphoid infiltration, any organ	0	1	0	3

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/760

Compound Name Mucochloric Acid Date Killed 8-2-67

Compound No. 100-G , Subcutaneous Date Completed 5-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	17	18	18
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	4	1	0	0
No. mice negative (killed and died)	8	8	8	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	4	3	1	0
No. mice killed or died, other diseases	4	6	9	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	2	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	5	3	1	0
Common other Lesions				
Focal pneumonitis	4	4	8	3
Follicular hyperplasia, spleen	0	5	0	1
Lymphoid infiltration, lung	0	2	2	2
Marked testicular atrophy, with fibrosis	1	0	0	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/760

Compound Name Mucochloric acid Date Killed 2/16/67

Compound No. 100-G, Oral Date Completed 3/12/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	16
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	1	0	1	2
No. mice negative (killed and died)	8	13	9	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	7	2	5	0
No. mice killed or died, other diseases	2	3	4	7
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	3	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	0
Pulmonary Carcinoma (Bronchogenic)	0	0	1	0
Hepatoma	1	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Malignant lymphoma	0	0	0	1
Other types Leiomyoma, uterus	0	0	0	1
Fibrosarcoma, kidney	1	0	0	0
Angioma, spleen	1	0	0	0
Subcutaneous fibroma	0	1	0	0
Total Number of Tumors	7	2	5	2
Common other Lesions Osteogenesis, spleen	1	0	0	0
Hyperkeratosis, stomach	1	0	0	0
Follicular hyperplasia - any site	3	0	0	2
Lymphoid infiltrate - any site	1	2	2	1
Fat necrosis, any site	0	1	0	0
Focal pneumonia	0	0	2	4

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

RODENTICIDES:
VARIOUS STRUCTURES

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/808

Compound Name Triphenyl tin acetate Date Killed 10-27-66

Compound No. 148-C, Subcutaneous Date Completed 4-10-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	5	0	0	1
No. mice negative (killed and died)	14	14	11	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	0	1	1	2
No. mice killed or died, other diseases	3	3	6	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	2
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	1
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types adrenocortical tumor (pleomorphic)	0	1	0	0
Total Number of Tumors	1	1	1	3
Common other Lesions Follicular hyperplasia - any site	2	0	1	2
Lymphoid infiltrate - any site	0	2	0	1
Focal pneumonia	2	2	4	0
Testicular atrophy	1	0	0	0
Chronic nephritis	0	0	1	0

Signed: Borge M. Ulland

BRL Fm. #449

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/808

Compound Name Triphenyl tin acetate Date Killed 5-24-67

Compound No. 148-L, Oral Date Completed 4-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	16	17
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	1	2	2	1
No. mice negative (killed and died)	7	9	13	12
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	5	6	5	4
No. mice killed or died, other diseases	4	2	0	1
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	2	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	1	4	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	4	0	1
Leiomyoma, uterus	0	0	0	1
Total Number of Tumors	6	7	5	6
Common other Lesions				
Follicular hyperplasia - any site	6	0	0	1
Lymphoid infiltrate - any site	4	0	0	1
Focal hyperkeratosis, stomach	0	1	0	0
Focal gastritis	1	1	0	0
Cystic ovary	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/766

Compound Name ANTU Date Killed 8-16-66

Compound No. 106-I, Subcutaneous Date Completed 6-15-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	17	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	1	3
No. mice negative (killed and died)	7	13	9	11
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	5	1	3	0
No. mice killed or died, other diseases	6	5	6	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	1	3	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Undifferentiated sarcoma, uterus	0	0	0	1
Total Number of Tumors	7	1	3	1
Common other Lesions Aspiration pneumonia	5	2	6	6
Microabscesses, liver and kidney	1	0	0	0
Amyloidosis, kidney	1	0	0	0
Cystic ovary	0	2	0	0
Follicular hyperplasia, spleen	0	1	0	0
Lymphoid infiltration, liver and kidneys	0	1	0	1

Signed: M. G. Valerio
Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/766

Compound Name ANTU Date Killed 2-16-67

Compound No. 106-I, Oral Date Completed 2-7-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	17	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	1	1	0
No. mice negative (killed and died)	13	11	15	15
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	4	0	2	1
No. mice killed or died, other diseases	0	6	1	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma (any site)	2	0	1	0
Teratoma, ovary	0	1	0	0
Total Number of Tumors	6	1	2	1
Common other Lesions Focal pneumonia	2	0	1	0
Focal gastritis	0	3	0	0
Cystic ovary	0	1	0	0
Focal hyperkeratosis, stomach	0	1	0	0
Nephritis	0	1	0	0
Lymphoid infiltration, lung	0	0	0	2

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/779

Compound Name A-Chloralose Date Killed 9-6-66

Compound No. 119-D, Subcutaneous Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	1	0	1
No. mice negative (killed and died)	11	14	16	13
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	4	1	2	3
No. mice killed or died, other diseases	3	2	0	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	2	1	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno/ Mammary Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Gastric papilloma	0	0	0	1
Total Number of Tumors	4	2	2	4
Common other Lesions				
Follicular hyperplasia - any site	1	0	0	1
Lymphoid infiltrate - any site	0	0	0	1
Focal pneumonia	3	1	0	0
Hypoplasia, kidney	1	0	0	0
Cystic seminal vesicles	1	0	0	0
Hyperkeratosis, stomach	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRI. Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No66/779

Compound Name A-Chloralose Date Killed 4-6-67

Compound No. 119-H, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	16	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	2	0	2
No. mice negative (killed and died)	11	15	15	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	5	3	2	3
No. mice killed or died, other diseases	2	0	1	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	1
Pulmonary Adenoma	2	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	3	0	0
Total Number of Tumors	6	3	2	3
Common other Lesions				
Follicular hyperplasia - any site	2	0	0	0
Focus of fatty metamorphosis	0	0	1	0
Telangiectasis, liver	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/795

Compound Name Amax Date Killed 10-20-66

Compound No. 135-C, Subcutaneous Date Completed 6-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	0	0	2
No. mice negative (killed and died)	12	13	10	9
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	4	3	4	5
No. mice killed or died, other diseases	2	2	4	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	2	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	3	3
Pulmonary Carcinoma	0	0	1	0
Hepatoma	4	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	0	0	1
Total Number of Tumors	4	3	4	5
Common other Lesions Lymphoid infiltrate - any site	0	3	1	4
Follicular hyperplasia - any site	1	0	0	1
Focal Pneumonia	2	1	1	2
Cysticercus, liver	0	0	1	0
Subcutaneous abscess	0	0	1	0
Subcutaneous mycotic granuloma	1	0	0	0

Signed: Borge M Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/795

Compound Name Amax Date Killed 4-20-67

Compound No. 135-C, Oral Date Completed 2-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	16	17	15
No. mice missing (no necropsy or tissue missing)	1	0	1	0
No. mice died during experiment	2	2	0	3
No. mice negative (killed and died)	11	14	14	11
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	4	1	2
No. mice killed or died, other diseases	1	0	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	2	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	0	1	0	0
Fibrosarcoma	0	0	0	1
Total Number of Tumors	6	4	1	3
Common other Lesions				
Follicular hyperplasia	2	0	0	0
Lymphoid infiltration	1	0	0	4
Amyloidosis, liver and kidney	1	0	0	0
Focal Pneumonia	0	0	2	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/791

Compound Name DURAX Date Killed 10-18-66

Compound No. 131-B, Subcutaneous Date Completed 5-28-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	16	14
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	4	0	2	2
No. mice negative (killed and died)	5	14	16	10
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	2	1	0	1
No. mice killed or died, other diseases	10	3	2	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	3	1	0	2
Common other Lesions				
Follicular hyperplasia, any site	7	1	0	1
Lymphoid infiltrate, any site	0	1	1	2
Focal pneumonia	2	0	1	2
Subcutaneous abscess	1	0	0	0
Chronic nephritis	1	0	0	0
Cystic ovary	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/791

Compound Name Durax Date Killed 4-20-67

Compound No. 131-D, Oral Date Completed 6-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	15	18	17
No. mice missing (no necropsy or tissue missing)	0	2	0	0
No. mice died during experiment	2	1	0	1
No. mice negative (killed and died)	8	9	14	12
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	8	5	3	2
No. mice killed or died, other diseases	2	2	1	2
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	2	2	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	0	4	0	1
Renal carcinoma	0	0	1	0
Total Number of Tumors	8	6	3	3
Common other Lesions Lymphoid infiltrate - any site	0	0	0	2
Follicular hyperplasia - any site	0	2	1	1
Cystic endometritis	0	1	0	0
Fatty metamorphosis, liver	2	0	0	0
Infarct, kidney	0	0	0	1
Focal pneumonia	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/750

Compound Name ZETAX Date Killed 9-29-66

Compound No. 090-B, Subcutaneous Date Completed 2-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	16	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	1	2	2
No. mice negative (killed and died)	8	15	9	7
No. mice died with tumors	1	1	1	1
No. mice killed with tumors	3	1	0	5
No. mice killed or died, other diseases	6	1	8	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	0	4
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Angioma , spleen	1	0	0	0
Rhabdomyosarcoma	0	0	1	0
Total Number of Tumors	4	2	1	6
Common other Lesions Follicular hyperplasia	5	0	0	0
Focal pneumonia	2	2	7	3
Osseous metaplasia, spleen	1	0	0	0
Lymphoid infiltrate, lung	1	1	1	3
Cystic seminal vesicles	0	0	1	0

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/750

Compound Name ZETAX Date Killed 3-9-67

Compound No. 090-B, Oral Date Completed 3-1-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	16	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	0	1	0	1
No. mice negative (killed and died)	11	9	10	9
No. mice died with tumors	0	1	0	0
No. mice killed with tumors	7	0	1	1
No. mice killed or died, other diseases	0	7	7	8
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	6	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Adeno-Carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	7	1	1	1
Common other Lesions Focal pneumonia	0	6	5	6
Lymphoid infiltrate, lung.	0	3	3	1
Follicular hyperplasia, Peyer's patch	0	0	1	0
Ovarian cyst	0	0	0	1

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Signed: Borge M Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/734

Compound Name ALTAX Date Killed 9-27-66

Compound No. 074-B, Subcutaneous Date Completed 1-19-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	18	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	0	1
No. mice negative (killed and died)	13	16	12	13
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	1	1	2	0
No. mice killed or died, other diseases	4	1	4	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	1	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin				
Other types				
Total Number of Tumors	1	1	2	0
Common other Lesions Follicular hyperplasia	4	0	0	3
Focal pneumonia	1	1	4	2
Lymphoid infiltration	0	0	0	1

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/734

Compound Name ALTAX Date Killed 12-6-66

Compound No. 074-C, Oral Date Completed 1-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	17	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	1	1	1
No. mice negative (killed and died)	15	9	11	12
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	3	3	4	2
No. mice killed or died, other diseases	0	6	2	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Fibrosarcoma	0	1	1	0
Total Number of Tumors	3	3	5	3
Common other Lesions Follicular hyperplasia (spleen)	1	0	0	0
Pneumonia	1	4	3	3
Lymphoid infiltration (any organ)	0	2	0	2

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/786

Compound Name Rotax Date Killed 8-25-66

Compound No. 126-B, Subcutaneous Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	3	0	1	1
No. mice negative (killed and died)	10	15	12	13
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	2	0	1	2
No. mice killed or died, other diseases	5	3	5	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Rhabdomyosarcoma, kidney	1	0	0	0
Angioma, spleen	1	0	0	0
Total Number of Tumors	3	0	1	2
Common other Lesions Follicular hyperplasia - any site	4	3	1	0
Lymphoid infiltrate - any site	4	2	3	2
Focal pneumonia	0	0	2	1
Renal hyperplasia	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/729

Compound Name Captax

Compound No. 069-D, Subcutaneous

Date Killed 10-11-66

Date Completed 9-28-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	18	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	7	0	0	0
No. mice negative (killed and died)	9	14	13	12
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	2	1	1
No. mice killed or died, other diseases	6	2	4	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	1	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	7	2	1	1
Common other Lesions				
Focal pneumonia	3	0	4	3
Focal osteogenesis (spleen)	1	0	0	0
Follicular hyperplasia	2	1	0	0
Lymphoid infiltration	0	1	0	2

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/729

Compound Name Captax Date Killed 1-12-67

Compound No. 069-E, Oral Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	17	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	7	0	1	1
No. mice negative (killed and died)	5	11	13	14
No. mice died with tumors	3	0	1	0
No. mice killed with tumors	6	1	3	1
No. mice killed or died, other diseases	4	6	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	1	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, spleen	0	0	1	0
Splenic hematoma	1			
Total Number of Tumors	11	1	5	1
Common other Lesions Hematoma, spleen	1	0	0	0
Follicular hyperplasia - any site	4	2	0	1
Lymphoid infiltrate - any site	1	5	0	2
Hyperkeratosis, stomach	1	0	0	0
Focal pneumonia	2	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/731

Compound Name Phenyl isothiocyanate Date Killed 6-15-66

Compound No. 071-E, Subcutaneous Date Completed 11-1-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	14	17	18	16
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	4	0	0	1
No. mice killed or died, other diseases	0	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	1
Angioma, spleen	1	0	0	0
Rhabdomyosarcoma, kidney	0	0	0	1
Total Number of Tumors	4	0	0	3
Common other Lesions				

Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/731

Compound Name Phenyl isothiocyanate Date Killed 2-2-67

Compound No. 071-F, Oral Date Completed 2-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	18	18	15	15
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	0	0	3	3
No. mice negative (killed and died)	14	16	16	10
No. mice died with tumors	0	0	0	3
No. mice killed with tumors	3	0	1	2
No. mice killed or died, other diseases	1	2	1	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Angioma, spleen	1	0	0	0
Hemangioma, liver	0	0	0	1
Total Number of Tumors	3	0	1	5
Common other Lesions Focal hyperplasia	1	1	0	0
Lymphoid infiltration, lung	0	1	0	2
Focal pneumonia	0	0	1	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/790

Compound Name Agerite White Date Killed 10-18-66

Compound No. 130-B, Subcutaneous Date Completed 6-18-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	1	0	0	2
No. mice negative (killed and died)	10	16	16	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	2	1	0	4
No. mice killed or died, other diseases	6	1	2	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	1	0	5
Common other Lesions Follicular hyperplasia - any site	4	0	0	0
Lymphoid infiltrate - any site	0	0	0	2
Focal pneumonia	4	0	2	0
Ovarian abscess	0	1	0	0
Endocarditis	0	0	0	1
Pulmonary abscess	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/790

Compound Name Agerite White Date Killed 5-4-67

Compound No. 130-E, Oral Date Completed 6-5-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	16	17	16
No. mice missing (no necropsy or tissue missing)	1	1	0	1
No. mice died during experiment	4	2	1	1
No. mice negative (killed and died)	7	12	14	10
No. mice died with tumors	2	0	1	1
No. mice killed with tumors	4	1	1	4
No. mice killed or died, other diseases	4	4	2	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Angioma, liver	1	0	0	0
Multiple adenocarcinomas, lung & mediastinum	1	0	0	0
Fibrosarcoma	0	0	1	0
Total Number of Tumors	7	1	2	5
Common other Lesions Follicular hyperplasia - any site	4	3	0	1
Lymphoid infiltrate - any site	0	1	1	2
Focal pneumonia	0	0	0	0
Necrotizing arteritis, heart and kidney	1	0	0	0
Nephritis	0	1	0	1
Chronic myocarditis	0	0	1	0
Cystic seminal vesicle	0	0	1	0

Signed: Borge M. Ulland

BRL Fm. #449

Borge M. Ulland, D.V.M.

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/740

Compound Name Argerite DPPD Date Killed 8-2-66

Compound No. 080-B, Subcutaneous Date Completed 1-11-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	16	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	2	0	2	1
No. mice negative (killed and died)	15	15	16	15
No. mice died with tumors	0	0	1	1
No. mice killed with tumors	2	2	1	2
No. mice killed or died, other diseases	1	0	0	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	2	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	0	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Hemangioma, spleen	1	0	0	0
Total Number of Tumors	3	2	2	3
Common other Lesions				

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Signed: John Innes
Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/740

Compound Name Agerite DPPD Date Killed 1-19-67

Compound No. 080-B, Oral Date Completed 2-29-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	16	17
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	0	2	1
No. mice negative (killed and died)	9	15	12	16
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	4	0	2	1
No. mice killed or died, other diseases	4	3	4	1
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	5	0	2	1
Common other Lesions				
Follicular hyperplasia	3	2	0	0
Myocardial calcification	1	0	0	0
Lymphoid infiltrate, any organ	0	2	1	0
Cystic kidneys	0	0	1	0
Focal pneumonia	0	0	2	2

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/797

Compound Name Agerite 150 Date Killed 10-20-66

Compound No. 137-B, Subcutaneous Date Completed 6-6-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	16	16	17
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	0	2	2	1
No. mice negative (killed and died)	8	14	14	13
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	3	0	1	1
No. mice killed or died, other diseases	6	3	3	3
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	1
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Total Number of Tumors	3	0	1	2
Common other Lesions				
Follicular hyperplasia, any site	2	1	0	1
Lymphoid infiltrate, any site	0	0	1	0
Osteogenesis, spleen	1	0	0	0
Focal pneumonia	4	2	2	2
Cystic seminal vesicle	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/797

Compound Name Agerite 150 Date Killed 4-27-67

Compound No. ~~137-B, Oral~~ Date Completed 4-17-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	11	15	9	12
No. mice died with tumors	2	0	0	1
No. mice killed with tumors	4	2	5	3
No. mice killed or died, other diseases	0	1	4	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	0	3	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Adeno Mammary Carcinoma	0	0	0	1
Carcinoma, skin	0	0	0	0
Other types Leiomyoma, uterus	0	0	0	1
Angioma, spleen	1	0	0	0
Granulosa cell tumor, ovary	0	1	0	0
Angioma, liver	0	0	0	1
Total Number of Tumors	6	2	6	5
Common other Lesions Lymphoid infiltrate - any site	1	0	0	2
Follicular hyperplasia - any site	0	0	0	1
Focal pneumonia	1	0	4	0
Myocarditis	1	0	0	0
Telangiectasis, liver	1	0	0	0
Cystic endometritis.	0	1	0	0
Cystic hyperplasia uterus	0	1	0	0

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Signed: [signature]

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66-762

Compound Name Agerite Powder Date Killed 8-16-66

Compound No. 102-C, Subcutaneous Date Completed 7-19-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	16	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	2	1	2	0
No. mice negative (killed and died)	6	8	12	11
No. mice died with tumors	1	1	1	0
No. mice killed with tumors	4	4	2	1
No. mice killed or died, other diseases	7	7	5	6
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	1	2	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	1	0	0
Neurilemoma	0	1	0	0
Total Number of Tumors	6	5	3	1
Common other Lesions				
Follicular hyperplasia, spleen	2	0	0	1
Lymphoid infiltration, lung	1	2	1	3
Focal pneumonia	6	4	5	2
Cystic endometritis	0	1	0	0
Hydrosalpinx	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66-0762

Compound Name Agerite Powder Date Killed 2/2/67

Compound No. 102, Oral Date Completed 3/7/68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	18	18	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	5	0	0	1
No. mice negative (killed and died)	3	11	10	13
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	1	7	3
No. mice killed or died, other diseases	7	6	1	2
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	1
Reticulum Cell Sarcoma, Type B	1	0	0	0
Pulmonary Adenoma	0	0	4	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	1	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Fibroma	1	0	0	0
Leiomyosarcoma - uterus	0	0	0	1
Total Number of Tumors	7	1	7	3
Common other Lesions Myocarditis	1	0	0	0
Lymphoid infiltrate any site	2	1	0	1
Follicular hyperplasia any site	1	0	0	1
Focal pneumonia	8	5	1	0
Cystic ovary	0	1	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/764

Compound Name Biphenyl Date Killed 8-16-66

Compound No. 104-F , Subcutaneous Date Completed 6-7-67

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	17	16	14
No. mice missing (no necropsy or tissue missing)	2	1	0	1
No. mice died during experiment	3	0	2	3
No. mice negative (killed and died)	7	10	11	10
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	5	3	2	3
No. mice killed or died, other diseases	6	7	5	5
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	0	0	0	3
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	1	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Deciduoma (?) or choriocarcinoma	0	0	0	1
Fibrosarcoma	1	0	0	0
Hemangioma, liver & spleen	1	0	0	0
Adnexal adenoma, sebaceous	0	0	1	0
Total Number of Tumors	6	3	2	4
Common other Lesions				
Aspiration pneumonia	4	6	5	5
Lymphocytic infiltration, liver	2	0	0	0
Hydrometra	0	1	0	0
Lymphocytic infiltration, kidneys	0	1	0	0

Signed: M G Valerio

Marion G. Valerio, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/764

Compound Name Biphenyl Date Killed 5-18-67

Compound No. 104-C, Oral Date Completed 4-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	16	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	2	2
No. mice negative (killed and died)	11	13	14	10
No. mice died with tumors	0	0	0	1
No. mice killed with tumors	5	2	4	3
No. mice killed or died, other diseases	2	3	0	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	4
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	3	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Hemangiosarcoma, uterus	0	1	0	0
Total Number of Tumors	6	2	4	4
Common other Lesions Follicular hyperplasia, any site	2	0	0	0
Lymphoid infiltrate - any site	0	1	0	2
Focal pneumonia	1	0	0	1
Cystic ovary	0	1	0	0
Hydrometra	0	1	0	0
Cystic lymph node	0	0	0	1

Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/798

Compound Name Agerite Alba Date Killed 10-20-66

Compound No. 138-B, Subcutaneous Date Completed 2-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	18	18	18
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	3	0	0	0
No. mice negative (killed and died)	8	0	16	12
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	6	2	2	2
No. mice killed or died, other diseases	1	16	0	4
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	2	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	2	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Fibrosarcoma, cervix	0	0	0	1
Angioma	1	0	0	0
Mesothelioma, Kidney	1	0	0	0
Hemangioma	1	0	0	0
Round cell sarcoma, cervix and liver	0	0	0	1
Total Number of Tumors	8	2	2	3
Common other Lesions				
Focal pneumonia	3	1	0	2
Follicular hyperplasia	2	0	0	0
Lymphoid infiltrate, lung	0	0	0	2
Hydrometra	0	18	0	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/798

Compound Name Agerite Alba Date Killed 5-4-67

Compound No. 138-C, Oral Date Completed 2-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	18	17
No. mice missing (no necropsy or tissue missing)	0	1	0	0
No. mice died during experiment	1	0	0	1
No. mice negative (killed and died)	7	6	13	9
No. mice died with tumors	1	0	0	0
No. mice killed with tumors	6	5	3	2
No. mice killed or died, other diseases	4	6	2	7
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	0	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	1	0
Hepatic Carcinoma with Pulmonary metastases				
Mammary Carcinoma				
Carcinoma, skin				
Other types Gastric papilloma	2	4	0	0
Angioma, spleen	1	0	0	0
Total Number of Tumors	10	5	3	2
Common other Lesions Pancreatitis	1	0	0	0
Follicular hyperplasia	2	0	2	3
Lymphoid infiltrate, any organ	1	1	0	2
Hyperkeratosis, stomach	1	2	0	0
Focal pneumonia	2	1	1	2
Focal gastritis	0	2	0	0

3&C

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BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/776

Compound Name p-Phenylphenol Date Killed 8-13-66

Compound No. 116-B, Subcutaneous Date Completed 4-2-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	11	18	17	17
No. mice missing (no necropsy or tissue missing)	1	0	0	0
No. mice died during experiment	6	0	1	1
No. mice negative (killed and died)	4	16	9	11
No. mice died with tumors	4	0	0	1
No. mice killed with tumors	4	0	4	1
No. mice killed or died, other diseases	5	2	5	5
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	0	0	2
Reticulum Cell Sarcoma, Type B	0	0	1	0
Pulmonary Adenoma	2	0	2	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, ~~MKSM~~ Adrenal cortex	0	0	1	0
Other types				
Total Number of Tumors	8	0	4	2
Common other Lesions Follicular hyperplasia - any site	1	0	0	0
Lymphoid infiltrate -any site	0	0	1	5
Focal pneumonia	4	2	6	1
Osteogenesis, spleen	1	0	0	0
Polyposis, intestines	1	0	0	0
Subcutaneous abscess	1	0	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/776

Compound Name P-Phenylphenol Date Killed 4-6-67

Compound No. 116C, Oral Date Completed 4-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	14	17	15	16
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	4	1	3	2
No. mice negative (killed and died)	12	15	11	11
No. mice died with tumors	0	0	2	1
No. mice killed with tumors	4	0	2	1
No. mice killed or died, other diseases	2	3	3	5
Tumors Lymphatic Leukemia	1	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Undifferentiated sarcoma	0	0	0	1
Renal adenoma	0	0	1	0
Adenocarcinoma (adenocortico with metastases)	0	0	1	0
Subcutaneous fibrosarcoma	0	0	1	0
Total Number of Tumors	4	0	4	2
Common other Lesions Follicular hyperplasia - any site	3	0	1	0
Lymphoid infiltrate - any site	1	2	2	4
Focal pneumonia	0	0	0	1
Congested liver	0	1	0	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/777

Compound Name O-Phenylphenol Date Killed 8-16-66

Compound No. 117-B, Subcutaneous Date Completed 4-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	15	18	18	16
No. mice missing (no necropsy or tissue missing)	0	0	0	2
No. mice died during experiment	3	0	0	2
No. mice negative (killed and died)	9	13	13	13
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	2	0	1	1
No. mice killed or died, other diseases	5	5	4	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	4	0	1	1
Common other Lesions				
Follicular hyperplasia - any site	2	2	0	0
Lymphoid infiltrate - any site	1	1	1	2
Focal pneumonia	1	2	3	0
Testicular atrophy	1	0	0	0

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SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/777

Compound Name O-Phenylphenol Date Killed 3-9-67

Compound No. 117-E, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	16	15
No. mice missing (no necropsy or tissue missing)	2	0	1	1
No. mice died during experiment	1	0	1	3
No. mice negative (killed and died)	11	15	14	15
No. mice died with tumors	0	0	0	0
No. mice killed with tumors	5	2	2	1
No. mice killed or died, other diseases	0	1	1	1
Tumors Lymphatic Leukemia	0	0	0	
Reticulum Cell Sarcoma, Type A	0	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	4	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, uterus	0	1	0	0
Leiomyoma , uterus	0	0	0	1
Total Number of Tumors	5	2	2	1
Common other Lesions				
Follicular hyperplasia - any site	0	0	0	0
Lymphoid infiltrate - any site	0	0	0	1
Focal pneumonia	0	0	1	0
Cystic endometritis	0	1	0	0

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Signed: Borge M. Ulland, D.V.M.

BRL Fm. #449

OTHER INDUSTRIAL CHEMICALS AND INTERMEDIATES OF INTEREST

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/767

Compound Name Diphenyl acetonetrile Date Killed 10-13-66

Compound No. 107-C, Subcutaneous Date Completed 4-3-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	14	18	16
No. mice missing (no necropsy or tissue missing)	0	2	0	0
No. mice died during experiment	5	2	0	2
No. mice negative (killed and died)	4	5	9	9
No. mice died with tumors	3	1	0	0
No. mice killed with tumors	2	3	3	3
No. mice killed or died, other diseases	9	7	6	6
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	3	2	1	2
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, liver	1	0	0	0
Gastric papilloma	0	1	0	0
Leiomyosarcoma, uterus and ovaries	0	0	0	1
Total Number of Tumors	5	4	3	4
Common other Lesions				
Follicular hyperplasia - any site	2	1	0	0
Lymphoid infiltrate - any site	4	2	1	0
Focal pneumonia	5	2	7	0
Subcutaneous abscess	2	0	1	0
Arteritis	0	1	0	0
Hydrometra	0	1	0	0
Thrombus, urinary bladder	0	0	1	0

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/767

Compound Name Diphenyl acetonitrile Date Killed 2-16-67

Compound No. 107-D, Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	13	16	17	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	5	2	1	0
No. mice negative (killed and died)	8	13	10	14
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	6	2	2	2
No. mice killed or died, other diseases	3	2	5	2
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	3	1	2	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Adenocarcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	1	0	0	0
Osteogenic sarcoma, lung	0	1	0	0
Total Number of Tumors	7	3	2	2
Common other Lesions				
Focal pneumonia	1	2	1	2
Follicular hyperplasia - any site	1	0	0	0
Focal necrosis - any site	1	0	1	0
Splenic infarct	1	0	0	0
Lymphoid infiltrate - any site	0	1	3	0
Cystic seminal vesicle	0	0	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/773

Compound Name Diphenyl carbonate Date Killed 8-18-66

Compound No. 113-B, Subcutaneous Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	17	17	18
No. mice missing (no necropsy or tissue missing)	1	1	0	0
No. mice died during experiment	1	0	1	0
No. mice negative (killed and died)	6	14	13	14
No. mice died with tumors	1	0	1	0
No. mice killed with tumors	5	1	1	0
No. mice killed or died, other diseases	5	2	3	4
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	1	1	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	5	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	6	1	2	0
Common other Lesions				
Follicular hyperplasia - any site	2	0	0	1
Lymphoid infiltrate - any site	3	2	0	1
Focal pneumonia	2	0	3	1
Hydronephrosis	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/773

Compound Name Diphenyl carbonate Date Killed 3-23-67

Compound No. 113-E, Oral Date Completed 3-15-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	15	15	17
No. mice missing (no necropsy or tissue missing)	0	0	1	1
No. mice died during experiment	1	3	3	1
No. mice negative (killed and died)	9	12	14	15
No. mice died with tumors	1	1	0	0
No. mice killed with tumors	6	2	1	2
No. mice killed or died, other diseases	2	3	2	0
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	1	1	1	2
Pulmonary Carcinoma	0	0	0	0
Hepatoma	3	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Adeno-carcinoma	0	1	0	0
Carcinoma, skin	0	0	0	0
Other types				
Angioma, spleen	2	0	0	0
Hemangioma, liver	0	1	0	0
Total Number of Tumors	7	3	1	2
Common other Lesions				
Lymphoid infiltrate - any site	1	2	1	0
Follicular hyperplasia - any site	2	0	0	0
Focal pneumonia	0	1	1	0

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Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/743

Compound Name REDAX Date Killed 7-26-66

Compound No. 083-B, Subcutaneous Date Completed 11-28-66

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	15	16	16
No. mice missing (no necropsy or tissue missing)	0	0	0	1
No. mice died during experiment	2	3	2	2
No. mice negative (killed and died)	12	17	17	15
No. mice died with tumors	1	0	1	1
No. mice killed with tumors	5	1	0	1
No. mice killed or died, other diseases	0	0	0	0
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	4	1	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	0	0	1
Pulmonary Carcinoma	0	0	0	0
Hepatoma	1	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Gastric papilloma	1	0	0	0
Thymoma	0	0	0	1
Total Number of Tumors	6	1	1	2
Common other Lesions				

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Signed: J.R.M. Innes

Dr. J.R.M. Innes

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/743

Compound Name REDAX Date Killed 2-2-67

Compound No. 083-B, Oral Date Completed 2-8-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	12	15	18	17
No. mice missing (no necropsy or tissue missing)	2	3	0	0
No. mice died during experiment	4	0	0	1
No. mice negative (killed and died)	5	11	12	6
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	1	3	3
No. mice killed or died, other diseases	4	3	3	9
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	1	1	0
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	2	0	2	3
Pulmonary Carcinoma	0	0	0	0
Hepatoma	6	0	0	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	9	1	3	3
Common other Lesions Focal pneumonia	2	3	3	6
Follicular hyperplasia	3	1	0	0
Lymphoid infiltrate, any organ	3	0	0	3
Osseous metaplasia, spleen	1	0	0	0

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Signed: Borge M. Ulland
Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/781

Compound Name p-methoxyphenyl acetic acid Date Killed 8-18-66

Compound No. 121-B, Subcutaneous Date Completed 4-16-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	17	17	17	17
No. mice missing (no necropsy or tissue missing)	0	1	1	0
No. mice died during experiment	1	1	1	1
No. mice negative (killed and died)	13	15	11	10
No. mice died with tumors	1	0	0	1
No. mice killed with tumors	1	2	0	0
No. mice killed or died, other diseases	3	0	6	7
Tumors				
Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	1	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	0	0
Pulmonary Carcinoma	0	0	0	0
Hepatoma	0	0	0	0
Hepatic Carcinoma with [illegible] Kidney metastases	1	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types				
Total Number of Tumors	2	2	0	1
Common other Lesions				
Follicular hyperplasia - any site	0	0	0	1
Lymphoid infiltrate - any site	1	0	1	4
Focal pneumonia	3	0	3	2
Cystic seminal vesicle	0	0	2	0
Hydronephrosis	0	0	0	1

Signed: Borge M. Ulland

Borge M. Ulland, D.V.M.

BRL Fm. #449

SUMMARY SHEET

PROJECT #16 CARCINOGENESIS ASSAY STUDIES P.M. No. 66/781

Compound Name p-methoxyphenyl acetic acid Date Killed 3-23-67

Compound No. 121-D, Oral Date Completed 4-11-68

	B6C3F1		B6AKF1	
	Male	Female	Male	Female
No. mice at start	18	18	18	18
No. mice surviving 18 months	16	18	16	18
No. mice missing (no necropsy or tissue missing)	0	0	0	0
No. mice died during experiment	2	0	2	0
No. mice negative (killed and died)	8	11	11	11
No. mice died with tumors	2	0	0	0
No. mice killed with tumors	5	3	5	4
No. mice killed or died, other diseases	3	4	2	3
Tumors Lymphatic Leukemia	0	0	0	0
Reticulum Cell Sarcoma, Type A	5	0	0	1
Reticulum Cell Sarcoma, Type B	0	0	0	0
Pulmonary Adenoma	0	2	4	3
Pulmonary Carcinoma	0	0	0	0
Hepatoma	2	0	1	0
Hepatic Carcinoma with Pulmonary metastases	0	0	0	0
Mammary Carcinoma	0	0	0	0
Carcinoma, skin	0	0	0	0
Other types Gastric papilloma	2	0	0	0
Angioma, spleen	3	1	0	0
Total Number of Tumors	12	3	5	4
Common other Lesions Follicular hyperplasia - any site	0	2	0	0
Lymphoid infiltrate - any site	0	1	1	3
Focal pneumonia	0	0	1	0
Epicarditis	1	0	0	0
Focal gastritis	2	2	0	1
Focal hepatitis	1	0	0	0
Dilated pancreatic duct	1	0	0	0

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Signed: Borge M. Ulland

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