

Spontaneous Neoplastic Lesions in the Crl:CD-1[®] (ICR)BR Mouse

March, 2000

Information Prepared by

Mary L. A. Giknis, Ph.D.

Charles B. Clifford, D.V.M., Ph.D.

TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE.....	1
COMMON STUDY PARAMETERS	1
DATA SETS PRESENTED	1
SUMMARY TABLE CALCULATIONS.....	2
Number of Studies (# Studies).....	2
Total Number of Organs (Total # Organs).....	2
Total Number of Lesions (# Lesions)	2
Percent of Total.....	2
Number of Studies Using This Diagnosis	2
Minimum and Maximum Percent Found (Minimum and Maximum % Found).....	3
ADDITIONAL INFORMATION.....	3
SYNONYMS	3
ABBREVIATIONS	3
ACKNOWLEDGEMENTS	4
REQUEST FOR DATA.....	4
Table 1: Summary of Individual Study Information and Survival/Males	5
Table 2: Summary of Individual Study Information and Survival/Females	6
Graph 1: Male Survival.....	7
Graph 2: Female Survival	8
Table 3: Neoplasms/Males.....	9
Table 4: Neoplasms/Females	14
Table 5: Incidence of Neoplasms by Study for Selected Organs/Males	21
Table 6: Incidence of Neoplasms by Study for Selected Organs/Females.....	23

INTRODUCTION

The data presented in these tables was gathered from 51 toxicology studies of at least 78 weeks duration. All studies were performed in the United States or Europe by contract laboratories or industrial toxicology facilities.

PURPOSE

The purpose of this compilation is to offer the study director, reviewing toxicologist and/or study pathologist some reported incidences of neoplasms in Crl:CD-1 (ICR)BR mice, maintained as control animals, in studies of 78-104 weeks duration. Diagnoses in this compilation are intentionally grouped in a manner to provide the user with a range of reported incidences of similar types of lesions. This compilation is not intended in any way to propose a system of standardized nomenclature nor does it separately include each and every variant of the lesion.

COMMON STUDY PARAMETERS

The 51 studies included in this publication were initiated between January 1987 and December of 1996 in seven different laboratories. All studies used male and/or female Crl:CD-1[®] (ICR)BR mice from three different Charles River Laboratories production sites: Raleigh, North Carolina; Kingston, New York and Portage Michigan.

The mice in these studies were from control groups of dietary or gavage studies and were approximately 4-7 weeks of age at study initiation. Some groups were untreated while others received the study vehicle, all served as control groups.

The mice included in this publication were generally singly housed in hanging wire mesh cages, fed a diet of Purina 5002 Certified Rodent Chow and had free access to water. The animal rooms were generally maintained at average temperatures of 72 +/- 5° Fahrenheit with an average relative humidity of 30-70%. A 12hr/12hr light/dark cycle was employed in all studies. Since these studies were conducted in different facilities over a period of several years, there was some variation in environmental conditions. The overall environmental conditions were not considered by those performing the studies to have had any effect on the quality or integrity of the studies. Information on the health monitoring, other than that associated with pathological examination conducted in accordance with scheduled or moribund sacrifices, was not available.

DATA SETS PRESENTED

Survival data are presented by study as the actual number surviving to terminal sacrifice and as a percent survival at terminal sacrifice, Tables 1 and 2. The survival data are also presented in graphic form, Graphs 1 and 2. Survival data were not available for all studies at the time of publication. Only those studies for which data were available are represented on the graphs.

The overall incidences of all neoplastic lesions observed in any organ are reported and summarized by sex, Tables 3 and 4. These data also include neoplastic lesions from mice that died or were found moribund and killed prior to terminal sacrifice. It does not include information from mice that were killed at any interim sacrifice. Due to the apparent diversity in terminology and the variability among studies in the incidence of

particular lesions, the individual study incidences of lesions in selected organs/systems are also presented, Tables 5 and 6. These organs/systems include liver, lung and whole body/multiple organ.

SUMMARY TABLE CALCULATIONS

The following is a description of how each of the parameters in the tables was calculated.

Number of Studies (# Studies)

This is the number of studies in which a particular tissue/organ was examined. In this publication, the number of studies is usually 46 for males and 48 for females. It is important for the reader to realize that some of the studies reported in this document were performed in only males or females and occasionally a specific tissue/organ was not examined in a particular study.

Total Number of Organs (Total # Organs)

This number represents the sum of the total number of tissues or organs examined in all of the control groups from all studies combined. Widespread tumors which showed involvement of multiple organs were listed on the basis of the total number of animals examined. Occasionally a tumor would be noticed in a tissue not designated for histological examination by the study protocol. In these instances, the tumor incidence was based on the total number of animals examined as any such tumor or lesion would have been noticed on gross examination of the animal. Autolysis did not routinely exclude tissues from diagnosis. Tissue numbers were adjusted only if the individual study table indicated that some tissues were missing or inadequate for examination. Some laboratories presented data separately for different regions within a organ (i.e., duodenum, jejunum, and ileum) while most presented data by the organ (i.e., small intestine). When data were presented separately by organ region, they were grouped under the organ and calculations were based on the number of organs examined.

Total Number of lesions (# Lesions)

This represents the total number of occurrences of this lesion in a specific organ in all studies examined.

Percent of Total

These values represent the particular incidence of a particular lesion/diagnosis in the total number (all studies combined) of a particular organ examined. These values were calculated by dividing the total number of lesions by the total number of organs/animals examined and multiplying by 100 to express the value as a percent. Values are expressed to the second decimal place. Some caution is indicated in using this number, since not all pathologists or institutions will include all diagnoses in their lexicon.

Number of Studies Using This Diagnosis

This is the number of studies in which a particular diagnosis was reported. This number may be useful in interpreting the overall incidence (percent of total) of a particular diagnosis, see above.

Minimum and Maximum Percent Found (Minimum and Maximum % Found)

The range reported is the lowest and highest percent incidence for each lesion from the studies where the diagnosis was made. Therefore, if a study did not include a particular diagnosis, it was excluded from these calculations. The minimum and maximum percent found values should be considered in conjunction with the Number of Studies Using the Diagnosis.

The individual study percentages, Minimum % Found and Maximum % Found, were calculated by dividing the number of times each diagnosis was made by the total number of organs examined in each study and then multiplying the resultant value by 100 to express it as a percent. Values are expressed to the second decimal place.

ADDITIONAL INFORMATION

If additional information is desired regarding the conduct of these studies or the incidence of a particular neoplasm please contact Mary Giknis through Charles River Laboratories, or via e-mail at MLAGIKNIS@att.net.

SYNONYMS

Synonymous terms or diagnoses were frequently encountered in different studies and were combined under a single, often broad diagnosis, which was considered to be the primary diagnosis. Although some effort was made to use currently acceptable terms, it is beyond the scope of this publication to propose a system of preferred diagnoses. The synonyms which were included in the various diagnoses are presented in the synonym list which follows. Where possible, terminology is consistent with the classification system proposed by the Society of Toxicologic Pathologists.

Skin:

Nerve Sheath Tumor = Schwannoma

Testis:

Sertoli Cell Tumor, Benign = Sertoliform Adenoma

Uterus:

Endometrium, Adenocarcinoma = Endometrial Carcinoma

Endometrial Stromal Sarcoma = Endometrial Sarcoma

Whole Body/Multiple Organ:

Lymphoma, Malignant = Lymphosarcoma

Mast Cell Tumor = Mastocytoma

ABBREVIATIONS

NR = Not Recorded or not available at the time of publication.

ACKNOWLEDGEMENTS

Our special thanks to Joe Frank, Bob Clark, Wayne Anderson, Kelly Hart, Merrill Tisdell, Daniel Potenta, and Ajit Thakur and all of the contributing laboratories without whose help this publication would not have been possible.

REQUEST FOR DATA

The purpose of these publications is to assist you, our clients, in evaluating your data. Our aim is to provide you with the data that you need to do your job well. We welcome any suggestions that you may have to improve this document as well as suggested topics for future documents. However, please realize that the publication is only as good as the data. To this end we invite you to participate in and support this worthwhile project by sending us your control data. If you or someone at your laboratory is willing to participate, please contact Mary Giknis through Charles River Laboratories, 251 Ballardvale Street, Wilmington, MA 01887 or at MLAGIKNIS@att.net.

Table 1: Summary of Individual Study Information and Survival/Males

Study Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Study Initiation Date	1987	1988	1988	1988	1988	1988	1989	1989	1989	1990	1990	1990	1990	1991	1991	1991
Total Number on Study	53	47	50	49	50	59	50	60	50	48	50	50	69	50	59	60
Number Surviving to Termination	NR	40	NR	NR	31	NR	NR	45	NR	NR	NR	47	NR	31	38	NR
% Survival		85.11			62.00			75.00				94.0		62.0	64.4	
Study Duration in Weeks	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78

Study Identification	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Study Initiation Date	1992	1992	1992	1992	1993	1993	1993	1993	1994	1995	1989	1992	1990	1991	1991	1993
Total Number on Study	50	50	50	50	50	50	60	50	50	70	50	49	60	70	65	60
Number Surviving to Termination	35	39	NR	NR	NR	NR	NR	NR	NR	NR	30	39	11	40	NR	22
% Survival	70.0	78.0									60.0	79.6	18.3	57.1		36.7
Study Duration in Weeks	78	78	78	78	78	78	78	78	78	78	97	100	104	104	104	104

Study Identification	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Study Initiation Date	1993	1993	1993	1993	1994	1994	1994	1995	1995	1995	1995	1996	1996	1996
Total Number on Study	70	50	65	50	50	65	65	60	60	60	80	50	50	116
Number Surviving to Termination	17	18	24	NR	22	43	28	26	29	NR	NR	27	22	NR
% Survival	24.3	36.0	36.9		44.0	66.2	43.1	43.3	48.3			54.0	44.0	
Study Duration in Weeks	104	104	104	104	104	104	104	104	104	104	104	104	104	104

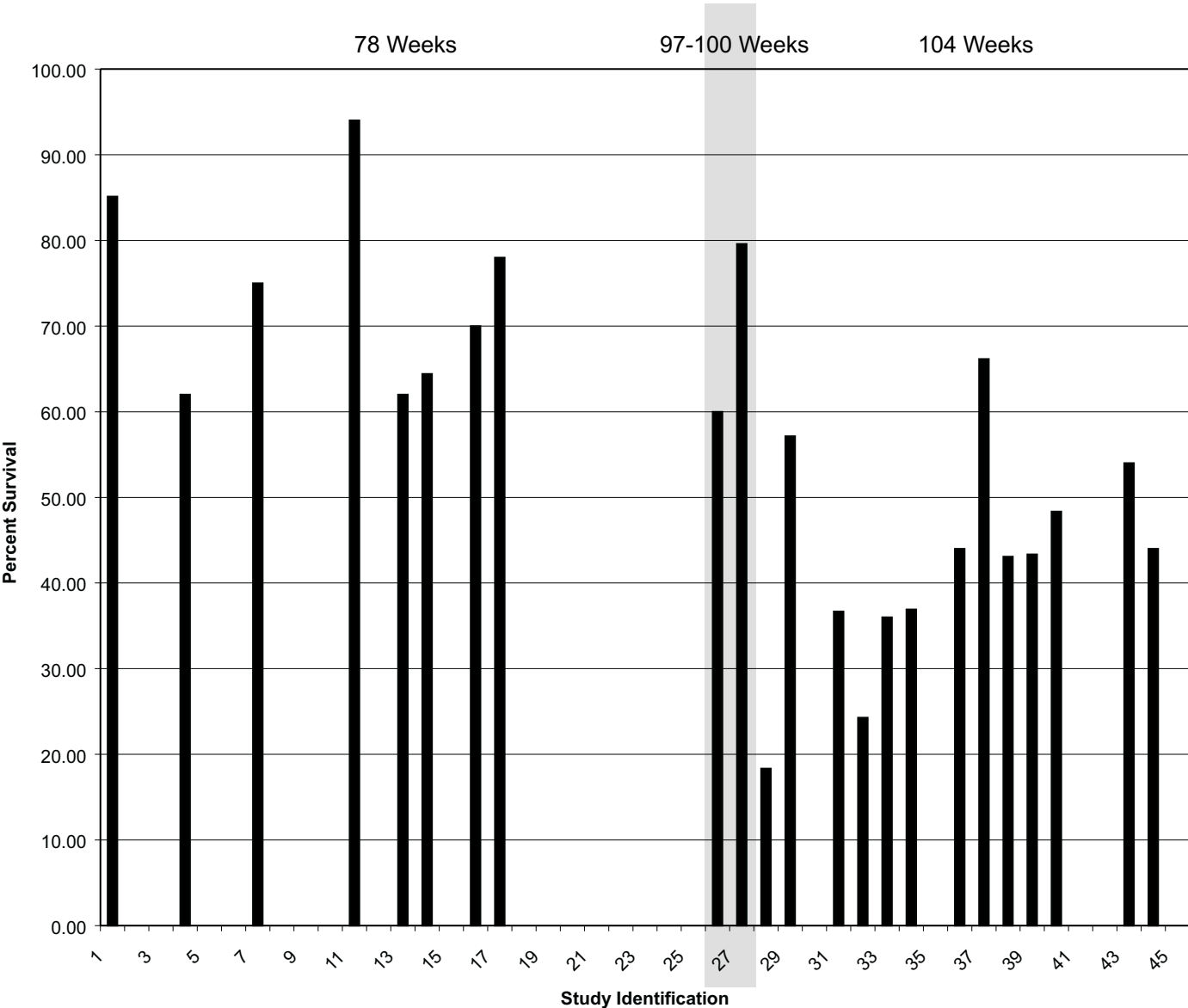
Table 2: Summary of Individual Study Information and Survival/Females

Study Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Study Initiation Date	1987	1988	1988	1988	1988	1988	1989	1989	1989	1990	1990	1990	1990	1991	1991	1991
Total Number on Study	52	49	50	48	49	60	50	60	50	48	50	49	70	49	59	60
Number Surviving to Termination	NR	40	NR	NR	33	NR	NR	45	NR	NR	NR	36	NR	31	38	NR
% Survival		81.6			67.3			75.0				73.5		63.3	64.4	
Study Duration in Weeks	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78

Study Identification	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Study Initiation Date	1992	1992	1992	1993	1993	1993	1993	1994	1995	1996	1995	1995	1989	1992	1990	1991
Total Number on Study	50	50	50	50	50	59	50	50	70	116	60	75	50	50	60	70
Number Surviving to Termination	39	NR	NR	NR	NR	NR	NR	NR	NR	NR	36	47	37	39	13	31
% Survival	78.0										60.0	62.7	74.0	78.0	21.7	44.3
Study Duration in Weeks	78	78	78	78	78	78	78	78	78	91	94	94	97	100	104	104

Study Identification	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Study Initiation Date	1991	1992	1993	1993	1993	1993	1993	1994	1994	1994	1995	1995	1995	1995	1996	1996
Total Number on Study	65	150	60	70	50	65	59	50	65	65	60	60	60	80	50	50
Number Surviving to Termination	NR	NR	21	13	16	20		22	36	28	27	23	NR	NR	21	21
% Survival			35.0	18.6	32.0	30.8		44.0	55.4	43.1	45.0	38.3			42.0	42.0
Study Duration in Weeks	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104

Graph 1: Male Survival



Graph 2: Female Survival

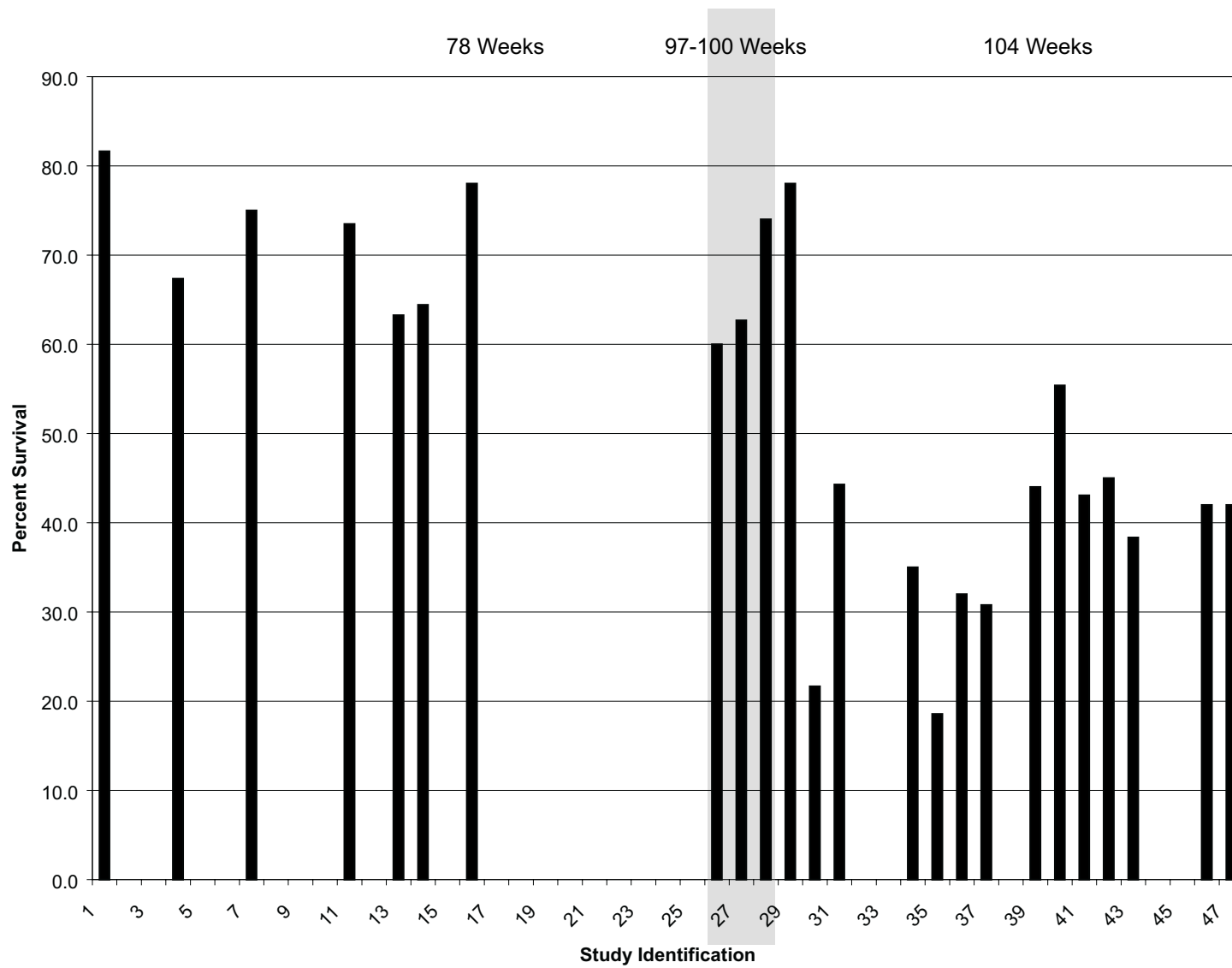


Table 3: Neoplasms/Males

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
LOCATION AND TUMOR	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
<i>DIGESTIVE SYSTEM</i>						
ORAL CAVITY	46	2577				
SALIVARY GLAND	46	2577				
STOMACH	46	2546				
Nonglandular Mucosa/Squamous Cell Papilloma		3	0.12	3	1.67	1.72
Adenocarcinoma		1	0.04	1	1.79	1.79
SMALL INTESTINE	46	2455				
Adenoma		1	0.04	1	1.72	1.72
Adenocarcinoma		5	0.20	4	1.67	2.90
LARGE INTESTINE/CECUM/ANUS	46	2482				
Adenocarcinoma		3	0.12	2	1.43	4.08
LIVER	46	2571				
Hepatocellular Adenoma		269	10.46	44	2.86	28.00
Hepatocellular Carcinoma		136	5.29	39	1.54	16.00
Hemangioma		9	0.35	7	1.54	4.00
Hemangiosarcoma		29	1.13	15	1.11	5.00
GALL BLADDER	46	2257				
Adenoma		3	0.13	3	1.69	2.00
Papilloma		6	0.27	3	2.08	5.00
PERITONEUM	46	2577				
Fibrosarcoma		1	0.04	1	1.69	1.69
Lipoma		2	0.08	2	1.43	2.00

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
LOCATION AND TUMOR	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
<i>RESPIRATORY SYSTEM</i>						
NASAL CAVITY	46	2577				
Nasal Adenocarcinoma		1	0.04	1	2.00	2.00
LUNG	46	2575				
Adenoma, Alveolar/Bronchiolar		368	14.29	43	2.00	42.00
Adenocarcinoma, Alveolar/Bronchiolar		177	6.87	37	1.43	26.00
<i>UROGENITAL SYSTEM</i>						
KIDNEY	46	2569				
Adenoma/Tubular Adenoma		7	0.27	5	2.00	4.00
Adenocarcinoma/Tubular Adenocarcinoma		4	0.16	4	1.43	2.00
URINARY BLADDER	46	2535				
Leiomyoma		1	0.04	1	1.67	1.67
Leiomyoblastoma, Malignant		2	0.08	2	1.45	1.67
Leiomyosarcoma		5	0.20	3	2.00	4.00
TESTIS	46	2576				
Interstitial Cell Tumor, Benign		19	0.74	15	1.43	4.00
Interstitial Cell Tumor, Malignant		2	0.08	2	1.67	2.00
Hemangioma		2	0.08	2	1.67	2.00
Hemangiosarcoma		2	0.08	2	1.43	1.67
Sertoli Cell Tumor, Benign		3	0.12	3	1.43	1.69
SEMINAL VESICLE	46	2542				
Adenocarcinoma		1	0.04	1	2.00	2.00
Leiomyosarcoma		1	0.04	1	1.67	1.67
PROSTATE	46	2565				
Adenoma		1	0.04	1	1.67	1.67
EPIDIDYMIS	46	2515				
Adenoma		1	0.04	1	2.00	2.00
Fibrosarcoma/Stromal Sarcoma		2	0.08	2	1.43	1.54
Leiomyoma		1	0.04	1	1.67	1.67

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
LOCATION AND TUMOR	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
<i>SKIN</i>						
SKIN	46	2552				
Papilloma/Squamous Cell Papilloma		4	0.16	4	1.47	2.00
Trichoepithelioma, Benign		1	0.04	1	2.63	2.63
SKIN, cont'd						
Chondroma		1	0.04	1	1.67	1.67
Fibroma		2	0.08	2	2.00	2.08
Fibrosarcoma		2	0.08	2	1.54	2.00
Hemangioma		1	0.04	1	1.54	1.54
Hemangiosarcoma		4	0.16	4	1.43	1.67
Leiomyosarcoma		1	0.04	1	1.43	1.43
Mast Cell Tumor		1	0.04	1	1.54	1.54
Nerve Sheath Tumor, Benign		1	0.04	1	1.67	1.67
Nerve Sheath Tumor, Malignant		3	0.12	3	1.43	2.00
Sarcoma		1	0.04	1	2.00	2.00
Neurofibroma		1	0.04	1	2.00	2.00
<i>ENDOCRINE SYSTEM</i>						
ADRENAL	46	2526				
Cortex, Adenoma		30	1.19	17	1.56	7.14
Cortex, Carcinoma		1	0.04	1	2.00	2.00
Pheochromocytoma, Benign		11	0.44	7	1.11	5.00
Spindle Cell Tumor, Benign		6	0.24	4	1.56	4.00
PANCREAS	46	2559				
Islet Cell, Adenoma		4	0.16	3	1.54	2.00
Hemangiosarcoma		1	0.04	1	1.69	1.69
PITUITARY	46	2504				
Adenoma		6	0.24	5	1.45	3.23
Carcinoma		1	0.04	1	2.04	2.04
Pars Intermedia, Adenoma		1	0.04	1	2.00	2.00
THYROID	46	2524				
C-Cell, Adenoma		1	0.04	1	2.00	2.00
Follicular Cell, Adenoma		12	0.48	12	1.11	2.00
Follicular Cell, Carcinoma		1	0.04	1	2.00	2.00

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
LOCATION AND TUMOR	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
PARATHYROID	46	2200				
<i>ENDOCRINE SYSTEM</i>						
BRAIN	46	2576				
Oligodendroglioma		1	0.04	1	2.04	2.04
BRAIN, cont'd.						
Meningioma		1	0.04	1	1.43	1.43
SPINAL CORD	46	2575				
PERIPHERAL NERVE	46	2509				
<i>MUSCULOSKELETAL SYSTEM</i>						
SKELETAL MUSCLE	46	2412				
BONE	46	2570				
Osteoma, Benign		1	0.04	1	1.43	1.43
Osteosarcoma		1	0.04	1	1.54	1.54
Sarcoma		1	0.04	1	1.43	1.43
<i>CIRCULATORY SYSTEM</i>						
HEART	46	2578				
BLOOD VESSEL	46	2554				
<i>HEMATOPOIETIC/LYMPHOID SYSTEM</i>						
BONE MARROW	46	2498				
Lymphoma, Malignant		1	0.04	1	2.00	2.00
SPLEEN	46	2543				
Hemangioma		8	0.31	7	1.67	4.00
Hemangiosarcoma		28	1.10	15	1.67	8.00

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
LOCATION AND TUMOR	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
Lymphoma, Malignant		4	0.16	1	8.00	8.00
THYMUS	46	2037				
Lymphoma, Malignant		7	0.34	1	14.89	14.89
LYMPH NODES	46	2504				
Hemangioma		3	0.12	3	1.43	2.04
Hemangiosarcoma		2	0.08	2	2.00	2.00
Lymphoma, Malignant		3	0.12	1	6.00	6.00
WHOLE BODY/MULTIPLE ORGAN	46	2565				
Lymphoma, Malignant		105	4.09	33	1.45	21.67
Lymphoma, Lymphocytic		11	0.43	8	1.69	4.08
Leukemia, Granulocytic		6	0.23	6	1.43	2.04
Leukemia, Lymphocytic		3	0.12	2	2.00	3.33
Hemangiosarcoma		29	1.13	8	1.67	12.00
Histiocytic Sarcoma		35	1.36	19	1.11	8.00
Mast Cell Tumor, Malignant		4	0.16	3	1.43	2.00
SPECIAL SENSES						
EYE	46	2539				
Harderian Gland, Adenoma		120	4.73	31	1.67	14.00
Harderian Gland, Adenocarcinoma		11	0.43	7	1.43	8.33
EAR	46	2575				
Pinna, Hemangioma		1	0.04	1	1.67	1.67
Pinna, Papilloma		1	0.04	1	1.67	1.67

Table 4: Neoplasms/Females

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	% FOUND
DIGESTIVE SYSTEM						
ORAL CAVITY	48	2695				
Tongue, Papilloma		1	0.04	1	1.67	1.67
STOMACH	48	2772				
Polypoid Adenoma		2	0.07	2	1.47	2.00
Squamous Papilloma		4	0.14	4	0.79	2.04
Squamous Cell Carcinoma		1	0.04	1	2.00	2.00
Undifferentiated Carcinoma		2	0.07	2	1.56	2.00
SMALL INTESTINE	48	2667				
Adenoma		1	0.04	1	1.18	1.18
Adenocarcinoma		3	0.11	3	1.49	2.00
LARGE INTESTINE/CECUM/ANUS	48	2645				
Leiomyoma		1	0.04	1	1.72	1.72
LIVER	48	2740				
Hepatocellular Adenoma		27	0.99	20	0.85	7.84
Hepatocellular Carcinoma		18	0.66	13	1.43	4.29
Undifferentiated Carcinoma		1	0.04	1	1.54	1.54
Hemangioma		6	0.22	6	1.54	2.00
Hemangiosarcoma		17	0.62	12	1.43	4.29
GALL BLADDER	48	2513				
Papilloma		2	0.08	2	2.00	3.03
Adenoma		1	0.04	1	3.03	3.03
PERITONEUM	48	2841				

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	% FOUND
<i>RESPIRATORY SYSTEM</i>						
NASAL CAVITY	48	2781				
LUNG	48	2773				
Adenoma, Alveolar/Bronchiolar		236	8.51	43	1.67	26.67
Adenocarcinoma, Alveolar/Bronchiolar		113	4.08	35	0.77	18.37
Mesothelioma, Benign		1	0.04	1	1.67	1.67
<i>UROGENITAL SYSTEM</i>						
KIDNEY	48	2857				
Adenoma/Tubular Adenoma		1	0.04	1	2.00	2.00
Adenocarcinoma/Tubular Adenocarcinoma		1	0.04	1	2.00	2.00
Transitional Cell Carcinoma		1	0.04	1	2.00	2.00
URINARY BLADDER	48	2718				
Transitional Cell Carcinoma		1	0.04	1	2.17	2.17
Leiomyosarcoma		4	0.15	4	1.75	2.44
Undifferentiated Sarcoma, Malignant		1	0.04	1	2.00	2.00
OVARY	48	2735				
Cystadenoma		18	0.66	12	1.54	6.00
Granulosa Cell Tumor, Benign		6	0.22	6	1.47	2.08
Tubular Adenoma		22	0.80	13	1.43	8.16
Luteal Cell Tumor, Benign		6	0.22	5	1.47	4.00
Luteal Cell Tumor, Malignant		1	0.04	1	1.11	1.11
Sertoliform Adenoma		2	0.07	2	2.00	2.04
Theca Cell Tumor, Benign		6	0.22	6	0.77	2.04
Theca Cell Tumor, Malignant		1	0.04	1	2.04	2.04
Hemangioma		8	0.29	7	1.11	2.90
Hemangiosarcoma		2	0.07	2	1.75	2.00
Leiomyoma		4	0.15	4	1.69	2.13
Oviduct, Fibroma		2	0.07	2	0.77	2.04
UTERUS	48	2812				
Endometrium, Adenoma		3	0.11	3	1.54	2.00
Endometrium, Adenocarcinoma		11	0.39	7	0.86	4.00
Endometrial Stromal Polyp		146	5.19	35	1.67	17.14

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
Endometrial Stromal Sarcoma		33	1.17	19	1.43	8.00
Fibroma		2	0.07	2	1.67	2.00
Fibrosarcoma		2	0.07	2	1.54	1.69
Granular Cell Tumor		1	0.04	1	2.04	2.04
Hemangioma		15	0.53	11	1.25	4.62
UTERUS, cont'd.						
Hemangiosarcoma		14	0.50	12	0.77	4.08
Leiomyoma		40	1.42	20	1.43	7.50
Leiomyosarcoma		36	1.28	21	0.86	6.00
Nerve Sheath Tumor, Malignant		6	0.21	5	1.43	3.08
Neurofibrosarcoma		1	0.04	1	2.00	2.00
Osteosarcoma		8	0.28	4	1.54	8.00
Deciduoma		1	0.04	1	1.75	1.75
CERVIX	48	2724				
Squamous Cell Carcinoma		5	0.18	5	1.15	2.00
Endometrial Stromal Polyp		7	0.26	6	1.15	3.33
Endometrial Stromal Sarcoma		6	0.22	6	0.80	2.04
Fibrosarcoma		3	0.11	3	0.80	1.69
Hemangiopericytoma		1	0.04	1	1.75	1.75
Leiomyoma		12	0.44	10	0.80	4.17
Leiomyosarcoma		16	0.59	11	1.45	4.17
Lymphangioma		1	0.04	1	2.04	2.04
Myxoma		1	0.04	1	2.00	2.00
Nerve Sheath Tumor, Benign		1	0.04	1	2.00	2.00
VAGINA	48	2744				
Papilloma		1	0.04	1	2.04	2.04
Polyp		4	0.15	3	0.78	2.86
Adenocarcinoma		1	0.04	1	2.04	2.04
Fibrosarcoma		1	0.04	1	1.43	1.43
Leiomyoma		7	0.26	6	1.47	3.33
Leiomyosarcoma		3	0.11	2	2.08	3.33
CLITORAL GLAND	48	2771				

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	% FOUND
<i>SKIN</i>						
SKIN	48	2803				
Basal Cell Tumor, Benign		1	0.04	1	1.67	1.67
Basal Cell Carcinoma		1	0.04	1	2.00	2.00
Squamous Cell Papilloma		4	0.14	4	1.43	2.00
Squamous Cell Carcinoma		8	0.29	7	1.43	3.33
Fibrosarcoma		10	0.36	8	1.54	4.29
Leiomyosarcoma		1	0.04	1	2.00	2.00
SKIN, cont'd.						
Liposarcoma		2	0.07	1	4.00	4.00
Rhabdomyosarcoma		1	0.04	1	1.54	1.54
Sarcoma		3	0.11	3	1.43	1.67
Nerve Sheath Tumor, Malignant		14	0.50	3	1.67	14.00
MAMMARY GLAND	48	2573				
Adenoma		2	0.08	2	2.04	2.63
Adenocarcinoma		42	1.63	22	0.78	8.33
Adenoacanthoma		1	0.04	1	1.79	1.79
Adenoacanthoma, Malignant		5	0.19	3	2.08	3.85
Fibrosarcoma		3	0.12	2	2.04	2.35
<i>ENDOCRINE SYSTEM</i>						
ADRENAL	48	2797				
Cortex, Adenoma		7	0.25	5	0.78	3.08
Cortex, Adenocarcinoma		1	0.04	1	2.00	2.00
Pheochromocytoma, Benign		8	0.29	5	0.78	5.00
Pheochromocytoma, Malignant		1	0.04	1	1.96	1.96
Spindle Cell Tumor, Benign		7	0.25	5	1.54	4.00
PANCREAS	48	2774				
Acinar Cell Adenoma		2	0.07	2	1.54	2.00
Islet Cell, Adenoma		6	0.22	6	1.54	2.08
PITUITARY	48	2697				
Adenoma		55	2.04	27	0.78	14.29
Carcinoma		1	0.04	1	1.69	1.69
Pars Intermedia, Adenoma		1	0.04	1	1.45	1.45

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	% FOUND
THYROID	48	2733				
C-Cell, Carcinoma		2	0.07	2	2.00	2.00
Follicular Cell, Adenoma		8	0.29	8	0.77	2.08
Follicular Cell, Carcinoma		1	0.04	1	1.56	1.56
PARATHYROID	48	2340				
Adenoma		4	0.17	4	1.64	3.23
<i>NERVOUS SYSTEM</i>						
BRAIN	48	2784				
Ependymoma		1	0.04	1	1.43	1.43
Meningeal Sarcoma		1	0.04	1	2.04	2.04
SPINAL CORD	48	1913				
PERIPHERAL NERVE	48	2837				
<i>MUSCULOSKELETAL SYSTEM</i>						
SKELETAL MUSCLE	48	2630				
Rhabdomyosarcoma		5	0.19	5	1.67	2.00
Carcinoma, Squamous Cell		1	0.04	1	0.78	0.78
Sarcoma		1	0.04	1	2.00	2.00
BONE	48	2814				
Osteoma		8	0.28	6	1.43	3.08
Osteosarcoma		4	0.14	4	1.43	2.00
Fibrosarcoma		1	0.04	1	1.56	1.56
<i>CIRCULATORY SYSTEM</i>						
HEART	48	2789				
Hemangiosarcoma		1	0.04	1	2.00	2.00

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
BLOOD VESSEL	48	2533				
HEMATOPOIETIC/LYMPHOID SYSTEM						
BONE MARROW	48	2817				
Fibrosarcoma		1	0.04	1	1.54	1.54
Plasmacytoma		1	0.04	1	2.04	2.04
Hemangiosarcoma		2	0.07	2	1.67	1.69
SPLEEN	48	2772				
Hemangioma		2	0.07	2	1.69	2.00
SPLEEN, cont'd.						
Hemangiosarcoma		12	0.43	11	1.43	3.85
Leiomyosarcoma		1	0.04	1	2.00	2.00
THYMUS	48	2404				
Thymoma, Malignant		2	0.08	2	1.49	2.00
Lymphoma, Thymic		1	0.04	1	1.89	1.89
LYMPH NODES	48	2742				
Hemangioma		5	0.18	4	1.43	4.17
WHOLE BODY/MULTIPLE ORGAN	48	2822				
Lymphoma, Malignant		274	9.71	41	1.67	50.00
Lymphoma, Lymphocytic		30	1.06	4	2.00	27.45
Fibrous Histiocytoma		1	0.04	1	2.00	2.00
Histiocytic Sarcoma		111	3.93	31	1.67	18.33
Lymphoma, Histiocytic		10	0.35	4	2.08	6.38
Leukemia, Lymphocytic		6	0.21	2	1.54	8.62
Leukemia, Granulocytic		7	0.25	5	0.77	4.08
Mast Cell Tumor, Malignant		1	0.04	1	2.00	2.00
Hemangioma		4	0.14	3	1.43	2.67
Hemangiosarcoma		25	0.89	9	1.67	12.00

		TOTAL		# STUDIES		
		# ORGANS	PERCENT	USING THIS	MINIMUM	MAXIMUM
	# STUDIES	# LESIONS	OF TOTAL	DIAGNOSIS	% FOUND	%FOUND
<i>SPECIAL SENSES</i>						
EYE	48	2733				
Harderian Gland, Adenoma		62	2.27	30	1.35	8.33
Harderian Gland, Adenocarcinoma		5	0.18	5	1.43	2.38
EAR	48	2544				
Squamous Cell Carcinoma		1	0.04	1	2.00	2.00

Table 5: Incidence of Neoplasms by Study for Selected Organs/Males

Study Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
LIVER	53	47	50	49	50	59	50	60	50	47	50	50	68	50	59	60	50	50	50	49	50	50	60
Hepatocellular Adenoma	4	7	5	7	3	7	3	3	2	2	5	2	11	3	9	3	12	6	5	2	3	3	3
Hepatocellular Carcinoma	4	6	1	1	2		1	4	1	2	1	1	6	2	2	2	3	4		4	2	2	1
Hemangioma										1							1						
Hemangiosarcoma	2						2				2			1		1	2		2				
LUNG	53	47	50	49	50	58	50	60	50	48	50	50	69	50	59	60	50	50	50	49	50	50	60
Adenoma, Alveolar/Bronchiolar	6	9	9	10	1	5	6	6		10	3	8	15	6	8	3	13	7	1	2	2	2	4
Adenocarcinoma, Alveolar/Bronchiolar	1	1	3	1	4	2	5	3		3			16		1		3	5	6	3	3	3	4
Hemangiosarcoma																							
WHOLE BODY/MULTIPLE ORGAN	53	47	50	49	50	59	50	60	50	46	50	50	69	50	59	60	50	50	50	50	50	50	50
Lymphoma, Malignant	2	2	1	4	1	3	1	2	2	2		1	1	1	2		7		1		1		
Lymphoma, Lymphocytic												2	2	1	1							1	
Leukemia, Granulocytic																							1
Leukemia, Lymphocytic								2															1
Hemangiosarcoma																							
Histiocytic Sarcoma							1	1					2		1					1			
Mast Cell Tumor, Malignant	1						1																

Table 5: Incidence of Neoplasms by Study for Selected Organs/Males (cont'd.)

Study Identification	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
LIVER	50	50	60	50	49	60	67	60	59	70	50	65	50	50	65	65	60	60	60	70	50	50	90
Hepatocellular Adenoma	6	6	8	7	3	3	4	15	4	3	8	13	8	7	3	8	8	11	5	2	14	6	7
Hepatocellular Carcinoma		1	2	3	5	4	10	2	8	4	3	1	8	2		5		2	4	6	4	5	5
Hemangioma											2	1					1	1		2			
Hemangiosarcoma				2		3	1	1	2	3			1							3			1
LUNG	50	50	60	50	49	60	69	60	60	70	50	65	50	50	65	65	60	60	60	70	50	50	90
Adenoma, Alveolar/Bronchiolar	8	9	7	14	12	5	11	2	6	8	4	6	6	13	14	17	10	11	14	15	13	21	6
Adenocarcinoma, Alveolar/Bronchiolar	3	1		13	6		6	3	6	12	7	8	6	3	7	2	4	1	4	1	3	4	10
Hemangiosarcoma																							
WHOLE BODY/MULTIPLE ORGAN	50	50	60	49	49	60	70	60	60	70	50	65	50	50	65	65	60	60	60	70	50	50	90
Lymphoma, Malignant			3	3		4	2	6	13	5		1		2	4	5	3	5	3	2	4	1	5
Lymphoma, Lymphocytic				1	2								1										
Leukemia, Granulocytic				1		1				1								1	1				
Leukemia, Lymphocytic																							
Hemangiosarcoma												3		1	5	3	4	1			6	6	
Histiocytic Sarcoma			1	2			2		2	2		1	4	1	4	2	2	1	4				1
Mast Cell Tumor, Malignant														1						1			

Table 6: Incidence of Neoplasms by Study for Selected Organs/Females

Study Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
LIVER	52	49	50	47	49	60	50	57	49	47	50	49	70	48	59	60	50	49	49	50	50	59	50	50
Hepatocellular Adenoma					1	1	1											1	1	1				
Hepatocellular Carcinoma			1										1			2		1	1		1			
Undifferentiated Carcinoma																								
Hemangioma																								1
Hemangiosarcoma	2					1					1	1					1							1
LUNG	52	49	50	48	49	60	50	57	50	48	50	49	70	49	59	60	50	50	50	50	50	59	50	50
Adenoma, Alveolar/Bronchiolar	3	6	6	5	2	2	5	6		3	5	5	11	3	6	5	8	3	2	2	2	2	6	2
Adenocarcinoma, Alveolar/Bronchiolar		3	4	1	3	2	4	2	4	5		1	7		2		3	6	1	2		5	1	1
Mesothelioma, Benign																								
WHOLE BODY/MULTIPLE ORGAN	52	49	50	48	50	60	50	58	50	47	50	49	70	49	59	60	50	50	50	50	50	59	50	50
Lymphoma, Malignant	2	2	7	6	1	5	7	10	2	5	4	2		3		6	4	3	1	3	3	9		5
Lymphoma, Lymphocytic													9											1
Fibrous Histiocytoma											1													
Histiocytic Sarcoma		1						1					2	2	1	2	2		2	1	1	3	1	
Lymphoma, Histiocytic			3	1						3														
Leukemia, Lymphocytic								5																
Leukemia, Granulocytic														2										2
Mast Cell Tumor, Malignant																								
Hemangioma													1											
Hemangiosarcoma													2											

Table 6: Incidence of Neoplasms by Study for Selected Organs/Females (cont'd.)

Study Identification	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
LIVER	58	85	59	75	50	50	60	70	58	117	59	70	50	65	51	50	65	65	60	41	59	70	50	50
Hepatocellular Adenoma				1	1				1	1		1			4	1	1	1	1	3	2		2	1
Hepatocellular Carcinoma			1				2	1	2		1	3						1						
Undifferentiated Carcinoma														1										
Hemangioma					1		1							1					1					1
Hemangiosarcoma							2	1	1	2	1	3												
LUNG	60	89	59	75	49	50	60	70	60	130	60	70	50	65	51	50	65	65	60	46	60	70	50	50
Adenoma, Alveolar/Bronchiolar	1	2	3	9	6	7			2	9			5	4	2	8	8	10	16	9	7	7	9	12
Adenocarcinoma, Alveolar/Bronchiolar		3			9	3			5	1			4	6		3	3	2	5	3	3	2	1	3
Mesothelioma, Benign																			1					
WHOLE BODY/MULTIPLE ORGAN	60	116	60	75	50	50	60	70	60	130	60	70	50	65	51	50	65	65	60	60	60	75	50	50
Lymphoma, Malignant			1	6	2	3	12	35	10	11	17	13	7	3		5	8	10	5	8	6		16	6
Lymphoma, Lymphocytic						6									14									
Fibrous Histiocytoma																								
Histiocytic Sarcoma	9		2	3			5	5	1	9	11	2	3	8	2	4	5	7	4	3			3	6
Lymphoma, Histiocytic						3																		
Leukemia, Lymphocytic																	1							
Leukemia, Granulocytic									1	1							1							
Mast Cell Tumor, Malignant																1								
Hemangioma			1	2																				
Hemangiosarcoma			1										4	2		1			2	4			3	6