Spontaneous Ophthalmic Lesions in the Crl:CD®BR Rat

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INTRODUCTION—The data in these tables were gathered from chronic toxicological studies designed for product registration. All studies were performed in the United States at contract toxicology laboratories or industrial toxicology facilities. All studies were conducted in accordance with existing regulations governing good laboratory practices. Facilities in which the studies were conducted were maintained in accordance with existing guidelines and regulations governing animal welfare.

I. COMMON STUDY PARAMETERS

Data from 34 groups of control animals are presented in Tables 1 through 10. All studies have the following conditions in common:

- The diet used for the majority of the studies was Purina 5002 Certified Rodent Lab Chow, except studies AS, BP, BQ, BR, BU, BY, BW, BY, BZ which used Agway Prolab RMH-3200 certified diet.
- Both short and long range studies were used in this data set with the maximum study duration being 24 months.
- The in-life completion dates of the studies ranged from August 1982 to November 1988.
- Crl:CD® BR rats were supplied from Charles River production sites in Portage, Michigan; Kingston, New York; and Montreal, Canada.
- With the exception of Study CA in which animals were housed two per cage, all other studies were conducted with one animal per cage using wire mesh cages.

  Studies were run in five industrial toxicology facilities and three contract laboratories.
- In 16 of the studies, a vehicle control was not used while the remaining studies all utilized vehicle controls which consisted of one of the following: corn oil, hydroxypropyl cellulose, water, heparin (iv), saline (iv) or methyl cellulose.
- All rats were approximately 6 weeks of age at the beginning of each study.
- Pretest examinations were performed on 4-6 week old rats prior to assignment to study.

II. ENVIRONMENTAL CONDITIONS

Environmental conditions for studies are rarely identical even when two studies are conducted in the same facility. Since these studies were conducted in different laboratories, some variation is inherent in the environmental conditions. The range of the mean room temperatures was 68° to 72°F. The range of the mean relative humidity was 45 to 55 percent. Relative humidity control was not precise in all facilities allowing the relative humidity to drop as low as 30 percent in winter months and to rise as high as 75 percent in the summer.

The photoperiod was maintained at a 12-hour light/dark cycle without twilight. Other environmental conditions were either not stated or were inconsistent between facilities. Information on health assessment monitoring other than that associated with pathologic examination conducted in accordance with scheduled or moribund sacrifices was not available.

Overall, environmental conditions were not considered by those performing and interpreting the studies to have affected the outcome of the studies or the distribution of lesions.

III. TABLES I THROUGH 10

Tables 1, 3, 5, and 7 present a summary by sex of ocular lesions of both pretest (1 and 3) and 24 month (5 and 7) study intervals. Tables 2, 4, 6, and 8 provide expanded data on individual studies used to compile the summary tables. Both the incidence of lesions or summary PERCENT and the individual study °Io of animals having a particular ocular lesion was calculated by dividing the total number of animals having the lesion by the total number of animals examined and then expressing the result as a percent (i.e., multiplying by 100). The values are presented to the second decimal place because some values are below 0.05 and would otherwise be rounded off to zero.

The range is the highest and lowest percent recorded for a given lesion in the individual study groups. For example, in the case of the pretest female rats, two corneal opacities were found in 2,346 animals examined or a PERCENT occurrence of 0.09. In the 20 control groups listed in Table 4 that were used to construct this summary data, there was at least one group with no corneal opacities (the low value in the RANGE) and at least one group with as high as 1.35 percent (the high value in the **RANGE).** The individual study percentages comprising the range were calculated by dividing the total number of lesions of a given type by the total number of animals in each study and then expressing the result as a PERCENT (i.e., multiplying by 100).

Each summary table lists the total number of animals examined. This was derived by totaling the number of animals in each individual study used to comprise the summary table. Within the summary table, the total number of lesions of each type as well as a total of all lesions are listed. These figures were derived by summing the lesions in each of the individual studies that comprise the summary table.

In each of the expanded tables individual studies are identified by a two letter code. The date on which the examination was performed, as well as the total number of animals examined, is also listed for each study. For each study, the total number of lesions encountered is listed.

Pretest Tables (1, **2, 3, and 4)**

Pretest screens were performed on all rats in the studies used in this data set prior to placing them on the study. Generally, rats which had positive findings at this examination were eliminated prior to group assignment and were never placed on study. The data presented in these tables were compiled from 20 shipments of rats to four different toxicology laboratories.

24-Month Interval Tables (5, 6, 7, **and 8)**

A total of nine two-year study groups were included in this data set. The data set includes only those animals which lived through the 24 months of study and were examined just prior to study termination. For this reason, the number of rats examined in each study group is relatively low in accordance with the expected survival rate of CD rats (see previous publication on survival of CD rats prepared by Charles River Laboratories (REFCD89)).

Intermediate Examination Data Sets (Tables 9 and 10)

These tables enumerate the results of periodic examinations of rats in the control groups of 26 studies. It is common practice during the course of

chronic toxicology studies to examine rats at one or more intervals besides study termination. In addition, short-term (sub-chronic) studies sometimes include ophthalmological examinations at predetermined intervals. Unfortunately, examination intervals are not uniform between facilities or studies which makes compiling large data sets at any interval difficult. The data in Tables 9 and 10 do, however, provide some insight as to the incidence and the development of ophthalmological lesions at various ages in rats; hence, the data has been included in a non-summarized tabular form. Animals in all groups were screened at pretest. Therefore, any lesions reported here developed after study initiation. In many instances, no lesions were noted, especially during those observation periods that occurred shortly after study initiation. [Because the pretest screen was performed and animals with lesions were eliminated from the population, the data may not truly reflect the incidence of these lesions in animals of any particular age except 4-6 weeks, when the pretest screen was performed.] For ease of reading, the studies have been grouped by examination interval wherever possible. Male data is listed in Table 9 and Female data in Table 10.

The following is a list of terms used to denote the opthalmologic lesions encountered in these studies.

EPIPHORA — An abnormal overflow of tears down the cheek caused by a failure of the tears to drain out of the lacrimal lake; often due to stricture of the naso-lacrimal passages.

RED SEROUS DISCHARGE — Frequently due to a lesion of the oral cavity such as malocclusion of the incisors. This generally is not a sign of primary eye disease but instead can be caused by disease of the ocular adnexa, including the lacrimal glands and the nasolacrimal duct.

PHTHISISBULBI — Shrinkage and wasting of the eye secondary to massive intraocular inflammation.

KERATITIS — Inflammation of the cornea; histopathologic diagnosis is keratopathy.

CORNEAL VASCULARIZATION — The abnormal presence of deep and superficial blood vessels in the cornea.

VENTRAL ENTROPION — The inversion of the ventral edge of the eyelid.

KERATOCONJUNCTIVITIS SICCA — Inflammation of the cornea and conjunctiva due to insufficient amount and/or abnormal quality of tears.

CORNEAL OPACITY — Opaque area on the cornea; includes lesions caused by trauma as well as certain keratopathies such as superficial mineralization.

PERSISTENT HYALOID REMNANT — Transparent filaments connecting the posterior capsule of the lens with the optic disk.

PERSISTENT PUPILLARY MEMBRANE — Iris filaments connecting the iris collarette to the anterior capsule of the lens.

CATARACT — An opacity of the crystalline lens of the eye or of its capsule.

ANTERIOR SYNECHIAE — Adhesion of the iris to the cornea.

POSTERIOR SYNECHIAE — Adhesion of the iris to the anterior capsule of the lens.

VITREOUS HEMORRHAGE — Blood in any region of the vitreous humor.

PALE OCULAR FUNDUS — A description of the ophthalmoscopic appearance of the ocular fundus due to primary disease of the eye or secondary to systemic disease (such as anemia).

LINEAR FOCAL RETINOPATHY — A noninflammatory disease of the posterior fundus which presents a sharply demarcated, pale serpentine retinal lesion of varying forms. The lesion is characterized by thinning of the affected zones of the retina and develops in absence of any apparent illness.

RETINAL DEGENERATION — Deterioration of the retina.

GLOSSARY OF SYNONYMS

In many cases, ophthalmologists may use more than one term to describe the same lesion. The following is a glossary of synonyms for the terms used in this data set.

LINEAR FOCAL RETINOPATHY — Focal retinal degeneration; focal retinochroidal degeneration; focal chorioretinal atrophy; focal retinopathy; retinal dysplasia.

CATARACT — Posterior lens capsule opacity; posterior lens opacity; focal posterior capsule lens opacity; posterior subcapsular incipient cataract; incipient cataract; anterior subcapsular opacity; cataract with incomplete mydriasis; focal nuclear

opacity; posterior subcapsular incipient cataract; incipient cataract; anterior subcapsular opacity; cataract with incomplete mydriasis; focal nuclear cataract; cortical cataract; posterior cortical cataract; lenticular opacity.

ANTERIOR SYNECHIAE — iris adhesions to cornea.

POSTERIOR SYNECHIAE — posterior synechiae with incomplete mydriases; fixed pupil.

RETINAL DEGENERATION — retinochoroidal degeneration; diffuse retinochoroidal degeneration.

VITREOUS HEMORRHAGE — preretinal bleeding.

PTHISIS — ruptured phthisical eye.

CORNEAL VASCULARIZATION — neovascularity.

PERSISTENT HYALOID REMNANT — gold pigment associated with hyaloid system.

PALE OCULAR FUNDUS — retinal pallor.

RED SEROUS DISCHARGE — palpebral exudate.

KERATITIS — keratopathy.

TABLE 1
SUMMARY — PRETEST INTERVAL
MALE CD® RAT OCULAR LESIONS

PRETEST INTERVAL			
Total Animals Examined: 2039			
LESION	**TOTAL LESIONS**	**PERCENT**	**RANGE**
VENTRAL ENTROPION	4	0.20	0-1.18
MICROPHTHALMIA	1	0.05	0-0.64
CORNEAL OPACITY	3	0.15	0-0.88
ANTERIOR SYNECHIAE	7	0.34	0-1.74
POSTERIOR SYNECHIAE	4	0.20	0-4.00
PERSISTANT HYALOID REMNANT	11	0.54	0-3.75
CATARACT	1	0.05	0-1.33
VITREOUS HEMORRHAGE	8	0.39	0-5.33
LINEAR FOCAL RETINOPATHY	27	1.32	0-8.00

TABLE 2
EXPANDED TABLE
MALE CD® RAT OCULAR LESIONS

STUDY ID	BO	BP	BD	BV	BW	BZ	Cl	CF	CH	CG	CE	CD	CC	DS	CV	CS	AP	CB	AS
EXAM DATE	Sep-86	Aug-82	Feb-88	Jul-86	Oct-88	Jul-88	Aug-88	Sep-88	Aug-88	Aug-88	Sep-88	Sep-88	Aug-88	Aug-88	Jan-88	Jan-88	Apr-84	Jan-88	Feb-84
# ANIMALS	288	340	156	120	172	100	50	25	25	25	25	25	25	56	75	75	240	60	157
TOTAL # LESIONS	2	11	1	2	17	3	3	none	none	1	none	none	2	1	7	5	9	none	2
VENTRAL ENTROPION		4																	
To		1.8																	
M1CROPHTHALMIA			1																
To			0.64																
CORNEAL OPACITY		3																	
To		0.88																	
ANTERIOR SYNECHIAE		4			3														
‰		1.18			1.74														
POSTERIOR SYNECHIAE							2								2				
%							4.00								2.67				
PERSISTANT HYALOID REMNANT				1											1		9		
%				0.83											1.33		3.75		
CATARACT																1			
We																1.33			
VITREOUS HEMORRHAGE					1										1	4			2
We					0.58										1.33	5.33			1.27
LINEAR FOCAL RETINOPATHY	2			1	13	3	I			1			2	1	3				
%	0.69			0.83	7.56	3.00	2.00			4.00			8.00	1.79	4.00				

TABLE 3
SUMMARY — PRETEST INTERVAL
FEMALE CD® RAT OCULAR LESIONS

PRETEST INTERVAL			
Total Animals Examined: 2346			
LESION	**TOTAL LESIONS**	**PERCENT**	**RANGE**
VENTRAL ENTROPION	1	0.04	0-0.29
KERATOCOJUNCTIVITIS SICCA	2	0.09	0-0.59
CORNEAL OPACITY	1	0.04	0-0.29
ANTERIOR SYNECHIAE	1	0.04	0-0.29
POSTERIOR SYNECHIAE	4	0.17	0-1.79
PERSISTANT HYALOID REMENANT	10	0.43	0-2.92
PERSISTENT PUPILI.ARY MEMBRANE	1	0.04	0-1.67
CATARACT	2	0.09	0-1.79
RETINAL DEGENERATION	3	0.13	0-2.00
LINEAR FOCAL RETINOPATHY	16	0.68	0-8.00
VITREOUS HEMORRHAGE	8	0.34	0-5.33

TABLE 4
EXPANDED TABLE
FEMALE CD® RAT OCULAR LESIONS

STUDY ID	CS	CV	CC	CD	CE	CG	CH	CF	Cl	BZ	BV	BD	BP	BO	DS	BW	AP	BQ	AS	CB
EXAM DATE ,	Jan-88	Jan-88	Aug-88	Sep-88	Sep-88	Aug-88	Aug-88	Sep-88	Aug-88	Jul-88	Jul-86	Feb-88	Aug-82	Sep-86	Aug-88	Oct-88	Apr-84	Oct-83	Feb-84	Jan-88
M ANIMALS	75	75	24	25	25	25	25	25	50	100	120	156	340	288	56	174	240	307	156	60
TOTAL 4 LESIONS	4	5	none	none	none	1	2	none	2	1	5	2	6	4	5	1	9	none	1	1
VENTRAL ENTROPION													1							
%													0.29							
KERATOCONJUNCTIVITIS SICCA													2							
%													0.59							
CORNEAL OPACITY													1							
%													0.29							
ANTERIOR SYNECHIAE													1							
%													0.29							
POSTERIOR SYNECHIAE		1											1	1	1					
%		1.33											0.29	0.35	1.79					
PERSISTANT HYALOID REMNANT		1							1		1						7			
%		1.33							2.00		0.83						2.92			
PERSISTENT PUPILLARY MEMBRANE																				1
																				1.67
CATARACT														1	1					
%														0.35	1.79					
RETINAL DEGENERATION									1			1			1					
%									2.00			0.64			1.79					
LINEAR FOCAL RETINOPATHY		2				1	2			1	4			2	2	1	1			
%		2.67				4.00	8.00			1.00	3.33			0.69	3.57	0.57	0.42			
VITREOUS HEMORRHAGE	4	1										1					1			
%	5.33	1.33										0.64					0.42		0.64	

TABLE 5
SUMMARY — 24 MONTH INTERVAL
MALE CD® RAT OCULAR LESIONS

24-MONTH INTERVAL			
Total Animals Examined: 313			
LESION	TOTAL LESIONS	PERCENT	RANGE
EPIPHORA	1	0.32	0-2.50
PHTHISIS	1	0.32	0-3.70
KERATITIS	12	3.83	0-30.00
CORNEAL VASCULARIZATION	13	4.15	0-22.22
DIFFUSE CORNEAL EDEMA	1	0.32	0-2.27
CORNEAL OPACITY	5	1.60	0-9.09
ANTERIOR SYNECHIAE	1	0.32	0-6.25
PERSISTANT HYALOID REMNANT	I	0.32	0-3.03
CATARACT	24	7.67	0-18.75
PALE OCULAR FUNDI	9	2.88	0-18.52
LINEAR FOCAL RETINOPATHY	3	0.96	0-3.45
RETINAL DETACHMENT	1	0.32	0-3.45

TABLE 6
EXPANDED - 24 MONTH INTERVAL
MALE CD® RAT OCULAR LESIONS

STUDY ID	DT	BP	DV	N	O	BQ	AT	AQ	BO
EXAM DATE	Nov-83	Aug-84	Oct-84	Jun-85	Jun-85	Nov-85	Aug-86	Mar-87	Sep-88
STUDY INTERVAL	24MO	24MO	24MO	24MO	24MO	24MO	24MO	24MO	24MO
# ANIMALS EXAMINED	27	44	40	16	29	52	33	44	28
TOTAL # OF LESIONS	12	9	19	4	5	5	7	7	4
EPIPHORA			1						
%			2.50						
PHTHISIS	1								
%	3.70								
KERATITIS			12						
%			30.00						
CORNEAL VASCULARIZATION	6	3			1		1	1	1
%	22.22	6.82			3.45		3.03	2.27	3.57
DIFFUSE CORNEAL EDEMA								1	
%								2.27	
CORNEAL OPACITY								4	1
%								**9.09**	3.57
ANTERIOR SYNCHIAE				1					
%				6.25					
PERSISTANT HYALOID REMNANT							1		
%							3.03		
CATARACT		5	6	3	2	5	1	1	1
%		11.36	15.00	18.75	6.90	9.62	3.03	2.27	3.57
PALE OCULAR FUNDI	5						3		1
%	18.52						9.09		3.57
LINEAR FOCAL RETINOPATHY		1			1		1		
%		2.27			3.45		3.03		
RETINAL DETACHMENT					1				
%					3.45				

TABLE 7
SUMMARY — 24 MONTH INTERVAL
FEMALE CD° RAT OCULAR LESIONS

24-MONTH INTERVAL			
Total Animals Examined: 330			
LESION	TOTAL LESIONS	PERCENT	RANGE
EPIPHORA	1	0.30	0-2.33
RED SEROUS DISCHARGE	1	0.30	0-3.45
PHTHISIS	2	0.61	0-3.33
KERATITIS	15	4.55	0-34.88
CORNEAL VASCULARIZATION	5	1.52	0-6.90
CORNEAL OPACITY	2	0.61	0-2.33
CATARACT	14	4.24	0-16.28
ANTERIOR SYNECHIAE	1	0.30	0-2.56
POSTERIOR SYNECHIAE	1	0.30	0-1.89
PALE OCULAR FUNDI	6	1.82	0-13.79
RETINAL DEGENERATION	2	0.61	0-5.13
LINEAR FOCAL RETINOPATHY	2	0.61	0-2.56

TABLE 8
EXPANDED - 24 MONTH INTERVAL
FEMALE CD® RAT OCULAR LESIONS

STUDY ID	DT	BP	DV	N	O	BQ	AT	AQ	BO
EXAM DATE	Nov-83	Aug-84	Nov-84	Jun-85	Jun-85	Nov-85	Aug-86	Mar-87	Aug-88
STUDY INTERVAL	24MO	24MO	24MO	24MO	24MO	24MO	24MO	24MO	24MO
# ANIMALS EXAMINED	28	43	43	39	35	53	29	30	30
TOTAL k LESIONS	1	4	23	5	3	3	7	3	3
EPIPHORA			1						
			2.33						
RED SEROUS DISCHARGE							1		
%							3.45		
PHTHISIS					1			1	
%					2.86			3.33	
KERATITIS			15						
°I0			34.88						
CORNEAL VASCULARIZATION		2					2		
%		4.65					6.90	3.33	
CORNEAL OPACITY		1				1			
%		2.33				1.89			
CATARACT			7	1	2	1		1	2
			16.28	2.56	5.71	1.89		3.33	6.67
ANTERIOR SYNECHIAE				1					
%				2.56					
POSTERIOR SYNECHIAE						1			
%						1.89			
PALE OCULAR FUNDI	1						4		
%	3.57						13.79		3.33
RETINAL DEGENERATION				2					
0 70				5.13					
LINEAR FOCAL RETINOPATHY		1		1					
0 /0		2.33		2.56					

TABLE 9
EXPANDED TABLE - PERIODIC INTERVALS
MALE CD® RAT OCULAR LESIONS

STUDY ID	**CA**						
EXAM DATE	**Oct-88**						
STUDY INTERVAL	**4WKOLD**						
# ANIMALS	14						
TOTAL # OF LESIONS	NONE						
STUDY ID	**BW**	**CC**	**CD**	**CE**	**CF**	**CG**	**CH**
EXAM DATE	**Oct-88**	**Sep-88**	**Sep-88**	**Sep-88**	**Sep-88**	**Sep-88**	**Aug-88**
STUDY INTERVAL	2WK	2WK	**2WK**	2WK	2WK	**2WK**	**2WK**
# ANIMALS	20	5	5	5	5	5	5
TOTAL # OF LESIONS	NONE	NONE	NONE	NONE	1	NONE	NONE
LINEAR FOCAL RETINOPATHY					1		
STUDY ID	**BS**	**BU**	**BY**	**BZ**	**CI**		
EXAM DATE	**Aug-86**	**Jun-85**	**Apr-86**	**Aug-88**	**Sep-88**		
STUDY INTERVAL	**1MO**	**IMO**	**IMO**	**IMO**	**IMO**		
# ANIMALS	15	15	15	12	10		
TOTAL # OF LESIONS	1	NONE	NONE	1	NONE		
LINEAR FOCAL RETINOPATHY	1			1			
STUDY ID	**BW**						
EXAM DATE	**Nov-88**						
STUDY INTERVAL	**6WK**						
# ANIMALS	10						
TOTAL # OF LESIONS	NONE						
STUDY ID	**BD**	**BE**	**BR**	**BT**	**BV**	**CB**	
EXAM DATE	**May-88**	**Sep-84**	**Aug-85**	**Mar-87**	**Oct-86**	**Apr-88**	
STUDY INTERVAL	**3MO**	**3MO**	**3MO**	**3MO**	**3MO**	**3MO**	
# ANIMALS	14	15	15	15	19	15	
TOTAL # OF LESIONS	2	2	NONE	NONE	NONE	4	
KERATITIS						1	
UVEITUS: IRITIS	2						
CATARACT		2				1	
VITREOUS HEMORRHAGE						1	
LINEAR FOCAL RETINOPATHY						1	
STUDY ID	**CV**		**BX**	**CS**			
EXAM DATE	**Jun-88**		**Sep-88**	**Jul-88**			
STUDY INTERVAL	**5MO**		**6MO**	**6MO**			
# ANIMALS	15		30	15			
TOTAL # OF LESIONS	NONE		1	NONE			
LINEAR FOCAL RETINOPATHY			1				
STUDY **ID**	**BX**						
EXAM DATE	**Oct-88**						
STUDY INTERVAL	**8MO**						
# ANIMALS	10						
TOTAL # OF LESIONS							
LINEAR FOCAL RETINOPATHY	1						
STUDY ID	**AQ**	AS					
EXAM DATE	**Mar-86**	**Jan-85**					
STUDY INTERVAL	**12MO**	**12MO**					
# ANIMALS	103	23					
TOTAL # OF LESIONS	15	1					
CONJUNCTIVITIS	5						
PERSISTANT HYALOID REMNANT							
UVEITUS: IRIDOCYCLITIS	1						
LENS ANOMALIES: Y SUTURES	1						
CATARACT	2						
ANTERIOR SYNECHIAE	1						
LINEAR FOCAL RETINOPATHY	3	1					
HYPERMYELINIZATION RETINA & CHOROID	1						

TABLE 10
EXPANDED TABLE - PERIODIC INTERVALS
FEMALE CD® RAT OCULAR LESIONS

STUDY ID	**CA**					
EXAM DATE	**Ocl-88**					
STUDY INTERVAL	**4WKOLD**					
# **ANIMALS**	14					
TOTAL # OF LESIONS	NONE					
STUDY ID	**BW**	**CD**	**CC**	**CE**	**CF**	CG
EXAM DATE	**Oct-88**	**Sep-88**	**Sep-88**	**Sep-88**	**Sep-88**	**Sep-88**
STUDY INTERVAL	2WK	2WK	2WK	2WK	2WK	2WK
# **ANIMALS**	20	5	5	5	5	5
TOTAL # OF LESIONS	NONE	NONE	NONE	NONE	NONE	NONE
STUDY ID	**BZ**	**BS**	**BU**	**BY**	**CI**	
EXAM DATE	**Aug-88**	**Aug-86**	**Jun-85**	**Apr-86**	**Sep-88**	
STUDY INTERVAL	**IMO**	**IMO**	**IMO**	**1M0**	**IMO**	
# **ANIMALS**	12	13	15	15	10	
TOTAL # OF LESIONS	1	NONE	NONE	NONE	NONE	
LINEAR FOCAL RETINOPATHY	1					
STUDY **ID**	**BW**					
EXAM DATE	**Nov-88**					
STUDY INTERVAL	**6WK**					
# **ANIMALS**	20					
TOTAL # OF LESIONS	2					
UVEITIS: ENDOPHTHALMITIS	1					
PALE OCULAR FUNDI	1					
STUDY ID	**BE**	**BR**	**BT**	**BD**	**BV**	**CB**
EXAM DATE	**Sep-84**	**Aug-85**	**Mar-87**	**May-88**	**Oct-86**	**Apr-88**
STUDY INTERVAL	**3MO**	**3MO**	**3MO**	**3MO**	**3MO**	**3MO**
# **ANIMALS**	15	15	15	15	20	15
TOTAL # OF LESIONS	7	1	1	NONE	NONE	NONE
RED SEROUS DISCHARGE ON ALL 4 LIDS		1				
CONJUNCTIVITIS:	2					
CORNEAL VASCULARIZATION	1					
UVEITIS: IRIDOCYCLITIS	1					
CATARACT	1					
LINEAR FOCAL RETINOPATHY			1			
RETINAL DEGENERATION	2					
STUDY ID	**CV**		**BX**	**CS**		
EXAM DATE	**Jun-88**		**Sep-88**	**Jul-88**		
STUDY INTERVAL	**5MO**		**6MO**	**6MO**		
# **ANIMALS**	15		30	15		
TOTAL # OF LESIONS	NONE		3	NONE		
PHTHISIS			2			
PALE OCULAR FUNDI			1			
STUDY ID	**BX**					
EXAM DATE	**Oct-88**					
STUDY INTERVAL	**8MO**					
# **ANIMALS**	10					
TOTAL # OF LESIONS	2					
PHTHISIS	2					
STUDY ID	**AQ**	AS				
EXAM DATE	**Mar-86**	**Jan-85**				
STUDY INTERVAL	**12MO**	**12MO**				
# **ANIMALS**	103	24				
TOTAL # OF LESIONS	8	2				
CONJUNCTIVITIS	5					
CATARACT	2					
LINEAR FOCAL RETINOPATHY		2				
RETINAL DEGENERATION	1					