

CITY OF CAMBRIDGE

ANIMAL CARE & CONTROL
57 INMAN STREET
CAMBRIDGE, MASSACHUSETTS 02139
498-9041

GINGER GAY
Director

CAPTAIN HENRY W. BREEN
Cambridge Police Department

MELVIN CHALFEN, MD
Commissioner
Health and Hospitals

Members:
JOHN CORCORAN
ELLEN KIRCHHEIMER
MICHAEL KLEIN
PAUL PURCELL

REPORT OF LABORATORIES CONDUCTING
EXPERIMENTS ON LIVE ANIMALS IN
CAMBRIDGE, MASSACHUSETTS

AUGUST 1985

Submitted to:

Robert W. Healy
City Manager
City of Cambridge

Prepared by:

Ginger Gay
Director
Cambridge Animal Commission

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City of Cambridge

8.

IN CITY COUNCIL

I. COUNCIL ORDER

April 22, 1985

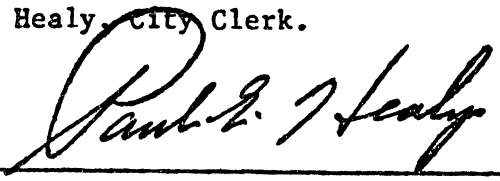
COUNCILLOR CLINTON

- WHEREAS: This City Council is in receipt of several communications from concerned citizens regarding alleged mistreatment of animals; and
- WHEREAS: It is alleged that many laboratory experiments are being conducted in Cambridge which may cause needless suffering to these animals; now therefore be it
- RESOLVED: That the City Manager be and hereby is requested to instruct the Animal Commission to provide the City Council with a report outlining the number of laboratories conducting this kind of experimentation, as well as the type of experiments being conducted.

In City Council April 22, 1985.
Adopted by the affirmative vote of 7 members.
Attest:- Paul E. Healy, City Clerk.

A true copy;

ATTEST:-


Paul E. Healy, City Clerk.

II. REPORT OF LABORATORIES CONDUCTING EXPERIMENTS ON LIVE ANIMALS IN CAMBRIDGE, MASSACHUSETTS

There are least seven (7) laboratories and institutes conducting research or testing products on animals in Cambridge. It is not possible to obtain a more precise figure because there is no universal requirement that such institutes register their activities. Some of the data provided in this Report have been obtained through their voluntary cooperation. Others, such as M.I.T. refused to provide any information to this office. However, the Animal Commission was able to obtain some of the pertinent information from the U.S. Department of Agriculture (USDA) under the Freedom of Information Act. (Appendix A, pages 7-15)

Based on the data compiled by this office, there are over 50,000 animals used each year in experiments and tests conducted in the City of Cambridge. Over ninety-nine percent (99%) of these animals are mammals. Most commonly used are mice and rats. However, many species of animals are used, including numerous dogs, cats, primates, rabbits and guinea pigs. These estimates are based on seven laboratories.

1. M.I.T., Division of Comparative Medicine
2. Harvard University
3. SISA Inc.
4. Arthur D. Little Inc.
5. Cambridge Research Laboratories
6. Repligen Corporation
7. Cambridge Diagnostics

Of the 50,000 animals the experimenters reported that approximately 16,000 animals were involved in procedures which involved pain or distress. (See Appendix A, Columns D). It is further claimed by the experimenters that in such cases anesthetic, analgesic or tranquilizer drugs were administered. However, some concerned citizens have reported to this office that the animals are not monitored on a round-the-clock basis for signs of pain or stress after invasive procedures. It remains open to question whether any analgesic drugs are administered on a continuing basis, in particular, after regular working hours.

III. LETHAL DOSE-50 (LD50)

Listed in the Directory of Toxicology of Testing Institutions in the United States published by Texas Institute are three Cambridge laboratories involved in acute oral toxicity testing. They are: SISA Inc., Arthur D. Little, Inc., and Cambridge Diagnostics.

The classic procedure of this type is the "Lethal-Dose 50" (LD-50) test which involves the forcible administration of a substance (no matter how mild or toxic) until 50 percent of the animals involved are poisoned to death. The LD-50 test is one of the most painful procedures ever devised.

It has not been possible for the Animal Commission to obtain the protocols of the tests and experiments conducted in the City of Cambridge because the most commonly used animals are mice and rats. These animals are exempted from the Animal Welfare Act. Therefore, a laboratory would not be required to register with the USDA.

However, the Animal Commission has obtained some information about federally-funded projects under the Freedom of Information Act. Such projects are typically carried out by the academic laboratories. (See Appendix B, pages 16-18). Common procedures include damaging the brains of mammals; electric shock; injection of steroids, hormones and drugs; and sensory deprivation. For example, in one study animals have been blinded for the last six years, exposed to continuous light and darkness, and subjected to brain lesions to determine "if the pineal gland secretes certain hormones."

The only current legal regulations are concerned with housing and care of animals and are enforced by the USDA under the authority provided by the Animal Welfare Act. These regulations do not concern the experimental procedures themselves, and do not set standards requiring the justification of painful procedures. The Department of Agriculture has also exempted from consideration numerous species such as mice, rats, birds and any farm animal. Furthermore, the Department of Agriculture has informed

us that they believe cruelty to animals is a long established local issue and therefore the regulation of experiments should fall under local regulations. Consequently, the federal government is trying to eliminate its current minimal role in regulating some of the conditions for some kinds of animals.

In the past, the Department of Agriculture's Inspectors have found some deficiencies in the smaller labs in Cambridge. It is not clear if these deficiencies represent the true extent of any mistreatment. For one, the Department has stated that it lacks the manpower to enforce any regulations fully. For another, the Department has exempted a number of species (as mentioned earlier). And finally, evidence of abuse has surfaced in the laboratories after labs have been inspected and found satisfactory by the USDA inspectors. In several cases, such evidence was obtained from illegal break-ins by concerned citizens. Two such laboratories (The City of Hope in California, and the University of Pennsylvania Head Injury Laboratory) were subsequently closed by the Secretary of Health and Human Services Margaret Heckler under pressure generated by the illegally obtained evidence.

IV. SUMMARY

Under the current City Ordinances the Animal Commission is unable to obtain objective, independent and corroborated evidence on the condition of laboratory animals in Cambridge. The overall conditions, magnitude, and type of experimental procedures conducted raise the concerns of the Animal Commission.

We therefore recommend that steps to insure that mistreatment of animals in this controlled environment be taken.

This could be achieved in a number of ways:

1. A Citizen Advisory Board
2. Periodic Inspections by the Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA)
3. Periodic Inspections by Members of the Animal Commission
4. An Animal Advocate as a Board Member on Review Committees
5. Periodic Reports Submitted to the Animal Commission by Laboratories

17760

APPENDIX A

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

1. DATE OF REPORT 11/15/84	FORM APPROVED OMB NO. 0579-0036
2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as regis- tered with USDA, include Zip Code)	
Massachusetts Institute of Technology 77 Massachusetts Avenue Cambridge, MA 02139	

INSTRUCTIONS

3. REGISTRATION NO. 14-18
4. REPORTING FACILITY (Name and Address, include Zip Code)
Division of Comparative Medicine 37 Vassar Street, Room 45-106 Cambridge, MA 02139

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.
Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without administration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
5. Dogs	19	0	19		19
6. Cats	113	50	63		113
7. Guinea Pigs	1,026	626	400		1,026
8. Hamsters	30	30			30
9. Rabbits	309	200	109		309
10. Primates	23	8	15		23
11. Rats	10,333	3,333	7,000		10,333
12. Mice	13,361	5,231	8,130		13,361
13. Wild Animals (specify) Frogs	78	18	60		78
14. Chickens	120	120	0		120
Sheep	8	0	8		8
15. Ferrets	165	0	165		165

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN <i>James C. Newton, VMD</i>	17. TITLE Associate Director - DCU	18. DATE SIGNED 11/19/84
19. SIGNATURE OF COMMITTEE CHAIRPERSON <i>James H. Fox, DVM</i>	20. TITLE Professor & Director	21. DATE SIGNED 11/14/84
22. SIGNATURE OF COMMITTEE MEMBER <i>Paul Van Aken</i>	23. TITLE Associate Director, OSP	24. DATE SIGNED 11-22-84

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL <i>[Signature]</i>	26. TITLE Director, Office of Sponsored Programs	27. DATE SIGNED 11/21/84
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note

This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

2 sites
MCS

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT
November 27, 1984

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)
Harvard University
Medical School
25 Shattuck Street
Boston, Mass. 02115

12/6/84

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.
Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-19
4. REPORTING FACILITY (Name and Address, include Zip Code)
Harvard Medical School
Harvard School of Public Health
Harvard Dental School

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without administration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach brief explanation)	F. TOTAL NO. Of Animals (Cols. B + C + D + E)
5. Dogs	1576	0	1605		1605
6. Cats	72	0	119		119
7. Guinea Pigs	1418	1209 1219	212		1421
8. Hamsters	3700	3642 3772	0		3642
9. Rabbits	1033	853 981	126		979
10. Primates	308	0 2	225		225
11. Rats	12226	1251	11512		12763 13837
12. Mice	141257		103484		103484 103860
13. Wild Animals (specify) Gerbils	453	453 533	0		453
14. Mink	23	0	23		23
Ferrets	11	0	53 16		16
15. Prairie Dogs	0	0	14		14

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN Dr. Ronald D. Hunt <i>Ronald D. Hunt</i>	17. TITLE Professor Comp. Pathology DVM Veterinarian	18. DATE SIGNED 11/27/84
19. SIGNATURE OF COMMITTEE MEMBER Dr. John R. David <i>J.R. David</i>	20. TITLE Professor of Medicine Chairman, Animal Committee	21. DATE SIGNED 11/27/84
22. SIGNATURE OF COMMITTEE MEMBER Dr. Arthur L. Lage <i>Arthur L. Lage, DVM</i>	23. TITLE Assistant Prof. Vet. Med. DVM Member, Animal Committee	24. DATE SIGNED 11/27/84

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL David M. Bray <i>David M. Bray</i>	26. TITLE Dean For Management and Administration	27. DATE SIGNED 11/28/84
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is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT

11/19/84

FORM APPROVED
OMB NO. 0579-0036

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

Harvard University
Faculty of Arts & Sciences
University Hall
Cambridge, MA 02138

ANNUAL REPORT OF RESEARCH FACILITY

(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your headquarters facility. Attach additional sheets if necessary.
Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-19

4. REPORTING FACILITY (Name and Address, include Zip Code)

Harvard University
Faculty of Arts & Sciences
16 Divinity Avenue
Cambridge, MA 02138

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without administration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
Dogs	0	0			0
Cats	0	0			0
Guinea Pigs	10	10			10
Hamsters	130	130			130
Rabbits	128	128			128
Primates	2	2			2
Rats	1,074	1,074			1,074
Mice	376	376			376
Wild Animals (specify)					
See Page 2.					

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

(We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

5. SIGNATURE OF ATTENDING VETERINARIAN <i>William J. Long, DVM</i>	17. TITLE Assoc. Director Vet. Services	18. DATE SIGNED 11/27/84
6. SIGNATURE OF COMMITTEE CHAIRPERSON <i>[Signature]</i>	20. TITLE Professor of Biology	21. DATE SIGNED 1/17/85
7. SIGNATURE OF COMMITTEE MEMBER <i>[Signature]</i>	23. TITLE Manager of F.A.S. Research Animal Facilities	24. DATE SIGNED 1/15/85

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I hereby certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL <i>C. Richard Taylor</i>	26. TITLE Chairman, Study Committee on Use of Animals in Research	27. DATE SIGNED 11/84
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Continuation of Animals Covered by Act
(Harvard University - Faculty of Arts and Sciences)

14-19

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without adminis- tration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
Foxes	4	4			4
Ostriches	1	1			1
Goats	8	8			8
Wallabies	2	2			2
Kangaroos	1	1			1
Prairie Dogs	4	4			4
Hyraxes	2	2			2
Geese	4	4			4
Llamas	4	4			4
Turkeys	4	4			4
Quail	4	4			4
Monitor lizards	2	2			2
Opossum	3	3			3
Ground squirrels	45	45			45

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT
November 28, 1984

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

Arthur D. Little, Inc.
Acorn Park
Cambridge, MA 02140

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.

Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-5

4. REPORTING FACILITY (Name and Address, include Zip Code)

Arthur D. Little, Inc.
134 Main Street and 38 Memorial Drive
Cambridge, MA 02142

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without administration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
5. Dogs	0 new 2*	0	0	0	0
6. Cats	0	0	0	0	0
7. Guinea Pigs	0	0	0	0	0
8. Hamsters	478	454	24	0	478
9. Rabbits	428	373	55	0	428
10. Primates	0 new 4**	0	0	0	0
11. Rats (exempt)	0	0	0	0	0
12. Mice (exempt)	0	0	0	0	0
13. Wild Animals (specify) sheep	23	20	3	0	23
14.	*Two dogs maintained from previous year on hand. Six additional unused dogs transferred to M.I.T.				
15.	**Three rhesus, one cyno maintained from last year on hand.				

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN James G. Fox, DVM	17. TITLE Consulting Veterinarian	18. DATE SIGNED 11/28/84
19. SIGNATURE OF COMMITTEE CHAIRPERSON Jacob J. Clement, Ph.D.	20. TITLE Chairman, Animal Research Committee	21. DATE SIGNED 11/28/84
22. SIGNATURE OF COMMITTEE MEMBER Andrew Sivak, Ph.D.	23. TITLE Vice President, Biomedical Research and Technology Section	24. DATE SIGNED 11/28/84

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL Charles J. Kensler, Ph.D.	26. TITLE Sr. Vice President, Professional Operations	27. DATE SIGNED 11/28/84
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11/19/84

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

USDA
424 Trapelo Road
Waltham, MA 02154

11/18/84

ANNUAL REPORT OF RESEARCH FACILITY

(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.

Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-A-84 93

4. REPORTING FACILITY (Name and Address, include Zip Code)

Cambridge Diagnostics
359 Allston Street
Cambridge, MA 02139

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without adminis- tration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
5. Dogs	0	0	0	0	0
6. Cats	0	0	0	0	0
7. Guinea Pigs	0	0	0	0	0
8. Hamsters	3981	3357	624	0	0
9. Rabbits	0	0	0	0	0
10. Primates	0	0	0	0	0
11. Rats	0	0	0	0	0
12. Mice	0	0	0	0	0
13. Wild Animals (specify)	0	0	0	0	0
14.					
15.					

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN <i>Michael Bernstein</i> Dr. Michael Bernstein	17. TITLE Veterinarian in Charge	18. DATE SIGNED 11/21/84
19. SIGNATURE OF COMMITTEE CHAIRPERSON <i>Laxman S. Desai</i> Dr. Laxman S. Desai	20. TITLE President	21. DATE SIGNED 11/21/84
22. SIGNATURE OF COMMITTEE MEMBER <i>Henry Gagnon</i> Mr. Henry Gagnon	23. TITLE Animal Supervisor	24. DATE SIGNED 11/21/84

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL <i>Laxman S. Desai</i> Dr. Laxman Desai	26. TITLE Director	27. DATE SIGNED 11/21/84
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1110

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT

November 6, 1984

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

Cambridge Research Laboratory
Ortho Diagnostic Systems, Inc.
195 Albany Street
Cambridge, MA 02139

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.
Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-103

4. REPORTING FACILITY (Name and Address, include Zip Code)


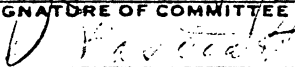
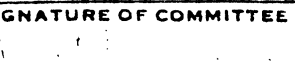
Cambridge Research Laboratory
195 Albany Street
Cambridge, MA 02139

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

A. Animals Covered By Act	B. New Animals Added this Year	C. Number of animals used in research, experiments, or tests involving no pain or distress.	D. Number of animals used in research, experiments, or tests where appropriate anesthetic, analgesic, or tranquilizer drugs were administered to avoid pain or distress.	E. Number of animals used in research, experiments, or tests involving pain or distress without administration of appropriate anesthetic, analgesic, or tranquilizer drugs. (Attach detailed explanation)	F. TOTAL NO. Of Animals (Cols. C + D + E)
5. Dogs	0	0	0	0	0
6. Cats	0	0	0	0	0
7. Guinea Pigs	50	50	0	0	50
8. Hamsters	0	0	0	0	0
9. Rabbits	0	10	0	0	10
10. Primates	0	0	0	0	0
11. Rats		Laboratory Breeds only		0	0
12. Mice		Laboratory Breeds only		0	0
13. Wild Animals (specify)	0	0	0	0	0
14.					
15.					


CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN 	17. TITLE James G. Fox, D.V.M. Consulting Veterinarian	18. DATE SIGNED 11-14-84
19. SIGNATURE OF COMMITTEE CHAIRPERSON 	20. TITLE Ronald J. Casciato, Ph.D. Director of Operations	21. DATE SIGNED
22. SIGNATURE OF COMMITTEE MEMBER 	23. TITLE Janet M. Cerundolo Manager, Research Support	24. DATE SIGNED

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL 	26. TITLE Louis A. Kamentsky, Ph.D. Director, Cambridge Research Laboratory	27. DATE SIGNED 11/12/84
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This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

1710

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT

November 26, 1984

FORM APPROVED
OMB NO. 0579-0036

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

Repligen Corporation
101 Binney St.
Cambridge MA 02142

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.
Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO. 14-99

4. REPORTING FACILITY (Name and Address, include Zip Code)

Repligen Corporation
101 Binney St.
Cambridge, MA 02142

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

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5. Dogs	0	0	0	0	0
6. Cats	0	0	0	0	0
7. Guinea Pigs	0	0	0	0	0
8. Hamsters	0	0	0	0	0
9. Rabbits	21	24	0	0	24
10. Primates	0	0	0	0	0
11. Rats	0	0	0	0	0
12. Mice	0	0	0	0	0
13. Wild Animals (specify)	0	0	0	0	0
14.					
15.					

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (we) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN S.M. Niemi	17. TITLE D.V.M., Consulting Veterinarian	18. DATE SIGNED 11/27/84
19. SIGNATURE OF COMMITTEE CHAIRPERSON	20. TITLE	21. DATE SIGNED
22. SIGNATURE OF COMMITTEE MEMBER	23. TITLE	24. DATE SIGNED

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL V. Atryzek	26. TITLE Manager, R.&D. Operations	27. DATE SIGNED 11/27/84
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UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES

1. DATE OF REPORT

October 31, 1984

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(Required For Each Reporting Facility Where Animals Are Held
And An Attending Veterinarian Has Responsibility)

2. HEADQUARTERS RESEARCH FACILITY (Name & Address, as registered with USDA, include Zip Code)

SISA PHARMACEUTICAL LABORATORIES, INC.
763D CONCORD AVENUE
CAMBRIDGE, MA 02138
NOW DBA - PARS PHARMACEUTICAL LAB.

11/6/84

INSTRUCTIONS

Reporting Facility - complete items 1 through 24 and submit to your Headquarters Facility. Attach additional sheets if necessary.

Headquarters Facility - complete items 25 through 27 and submit on or before December 1 of each year for the preceding Federal fiscal year (October 1, to September 30) to the Veterinarian in Charge for the State where the research facility headquarters is registered.

3. REGISTRATION NO.

14-8

4. REPORTING FACILITY (Name and Address, include Zip Code)

SAME AS ABOVE

REPORT OF ANIMALS USED IN ACTUAL RESEARCH, TESTING, OR EXPERIMENTATION - Section 2.28 of Animal Welfare Regulations requires appropriate use of anesthetics, analgesics, and tranquilizing drugs during research, testing, or experimentation. Experiments involving pain or distress without use of these drugs must be reported and a brief statement explaining the research.

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5. Dogs	0	0	0	0	0
6. Cats	0	0	0	0	0
7. Guinea Pigs	0	0	0	0	0
8. Hamsters	0	0	0	0	0
9. Rabbits	84	0	84	0	84
10. Primates	0	0	0	0	0
11. Rats	399	399	0	0	399
12. Mice	1478	1478	0	0	1478
13. Wild Animals (specify)	0	0	0	0	0
14.	0	0	0	0	0
15.	0	0	0	0	0

CERTIFICATION BY ATTENDING VETERINARIAN FOR REPORTING FACILITY OR INSTITUTIONAL COMMITTEE

I (We) hereby certify that the type and amount of analgesic, anesthetic, and tranquilizing drugs used on animals during actual research, testing or experimentation including post-operative and post-procedural care was deemed appropriate to relieve pain and distress for the subject animal.

16. SIGNATURE OF ATTENDING VETERINARIAN <i>James B. Fox, DVM</i>	17. TITLE Consulting Veterinarian	18. DATE SIGNED 11/6/84
19. SIGNATURE OF COMMITTEE CHAIRPERSON <i>Ellen M. Esquivel</i>	20. TITLE Director, Pharmacology	21. DATE SIGNED 11/5/84
22. SIGNATURE OF COMMITTEE MEMBER <i>Louise R. Pincel</i>	23. TITLE Director, Animal Welfare	24. DATE SIGNED 11/6/84

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

I certify that the above is true, correct, and complete and that professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, during actual research, testing, or experimentation including post-operative and post-procedural care are being followed by the above research facilities or sites (7 U.S.C. Section 2143).

25. SIGNATURE OF RESPONSIBLE OFFICIAL <i>Karyn S. Van</i>	26. TITLE C.E.O.	27. DATE SIGNED 11/8/84
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APPENDIX B

Baltimore Johns Hopkins Univ.
Joseph T. Coyle
R01MH26654-08
RATS
Dollars not shown

"Psychotropic drugs developing dopamine neurons."
To see the effect on brain pathways of lesions in the fetal brain made by injecting a chemical into pregnant animals.

Johns Hopkins Univ.
David S. Olton
R01MH24213-09
RATS
Dollars not shown

"Adaptive behavior and limbic function."
To test the hypothesis that only the hippocampus affects "working" memory as opposed to "reference" memory, using surgical methods to induce lesions and implant electrodes.

MASSACHUSETTS

Belmont McLean Hospital,
Div. of Mass General
5R01MH34079-05
MICE
\$119,601

"Quantitative neurocytology in neuropsychiatric disorders."
To determine changes in brain cells that occur as a result of "a variety of pathological insults."

Boston Boston Univ.
Conan Kornetsky
1K05DA00099-01
RATS
\$57,397

"Brain stimulation models of drug abuse."
To train students in the effects of abused drugs (morphine, marijuana, amphetamines, etc.) using electrical stimulation of the brain as both reward and "aversive stimuli."

Harvard Univ.
J. Allan Hobson
R01MH13923-16
CATS
Dollars not shown

"Neural mechanisms of sleep cycle control."
To investigate how the central nervous system controls the sleep cycle, by dripping various substances directly into cats' brains, and recording changes using implanted electrodes.

Harvard Univ.
Roger T. Kelleher
2P51RR00168-23
PRIMATES
\$101,792

"Behavioral biology."
To study human health problems using primate models. Breeding primates for research.

Harvard Univ.
Roger T. Kelleher
5R01MH07658-19
MONKEYS
Dollars not shown

"Drug effects on behavior controlled by noxious stimuli."
To control behavior through shock, drugs and "other noxious stimuli."

Northeastern Univ.
Michael Terman
R01MH27442-06
RATS
Dollars not shown

"Behavioral analysis of circadian sensory oscillations"
To study variations in response to visual and auditory stimuli, and the effect of experimentally produced lesions in areas of the brain that may control motor activity.

Cambridge Mass. Inst. of Tech.
Michael J. Baum
5K02MH00392-03
FERRETS, RATS
Dollars not shown

"Behavioral effects of sex steroids."
Various sex hormones are given soon after birth to determine the time that these hormones will produce changes in sexual behavior.

Mass. Inst. of Tech.
Richard J. Wurtman
R01MH28783-07
MICE, RATS
Dollars not shown

"Psychopharmacological effects of exogenous choline."
To explore the effect of choline and lecithin on behavior, and their interaction with other drugs.

Medford Tufts Univ.
Klaus A. Miczek
R01DA02632-05
RATS, MICE,
MONKEYS
Dollars not shown

"Psychomotor stimulants and aggression."
The effect of cocaine, amphetamines, alcohol & other drugs on aggressive behavior, & counteracting the effects of those drugs with other drugs such as chlorpromazine.

Bedford Boston Univ.
Deepak N. Pandya
2R01NS16841-04
MONKEYS
\$110,706

"Organization of the cerebral cortex."
Studies structural connections of nerve fibers in various regions of brain in attempt to determine how brain is organized. Method requires electrodes, injections of tracer dyes, and surgical destruction of brain cells.

Waltham Eunice Kennedy
Shriver Ctr. Mtl.
James E. Crandall
1R23NS20213-01
MICE
\$51,674

"Ontogeny of thalamocortical modules."
Study of embryonic development of connections between upper and lower parts of brain in normal and abnormal (mutant) mice. Sections of brain removed for chemical analysis.

Cambridge M.I.T.
Richard M. Held
5P30EY02621-07
UNSPECIFIED
ANIMALS
Award not available

"Central visual processes."
As part of a larger project, unspecified animals are used to study brain damage and eye disorders using electrophysiological readings of evoked potentials.

MICHIGAN
Detroit Wayne Univ.
Richard R. Gala
5R01HD14671-03
RATS
\$78,860

"Regulation of prolactin biorhythms."
Surgically created brain lesions, and hysterectomies are performed to determine the sexual-hormonal body rhythms of female rats.

M.I.T.
Richard A. North
5R01AM32979-04
GUINEA PIGS
\$133,064

"Single neuron activity."
In order to study structure and function of intestines, "recordings" are made from animals' small intestinal nerve cells.

Wayne Univ.
Harry G. Goshgarian
5R01NS14705-06
RATS
\$55,493

"Functional plasticity in the spinal cord."
In order to see if recovery is possible after certain spinal cord injury, rats' spinal cords are cut and crushed and subsequently paralyzed. Their brains are studied by embedding electrodes.

M.I.T.
Richard J. Wurtman
5R01HD11722-06
RATS, CATTLE
\$178,290

"Control of arginine vasotocin and melatonin secretion."
Animals are blinded, exposed to continuous light and darkness, and subjected to brain lesions to determine if pineal gland secretes certain hormones.

East Lansing Michigan Univ.
Lynwood G. Clemens
5R01HD06760-13
RATS, HAMSTERS
\$141,788

"Neural control of sexual behavior."
Electrical stimulation of the brain and removal of brain tissue, to examine hormonal influence on female reproductive system.

Shrewsbury Worchester Foundation
for Exper. Bio.
James W. McKearney
5R01MH18421-15
MONKEYS, RATS
\$160,743

"Drug effects on behavior maintained by aversive events."
Studies effects of long term treatment with anti-depressant drugs on behavior and brain chemistry. Method unclear but "aversive events" and "noxious stimuli" are used.

Brigham and Women's
Hospital
Robert A. Kloner
5R01HL28048-03
RATS, DOGS
\$107,194

Brigham and Women's
Hospital
John A. Mannick
5R01GM26016-06
MICE, RABBITS
\$225,293

Brigham and Women's
Hospital
Robert J. Smith
5P50GM29327-03
DOGS
\$71,414

Brigham and Women's
Hospital
Douglas W. Wilmore
5P50GM29327-03
DOGS
\$71,414

Brigham and Women's
Hospital
Douglas W. Wilmore
5P50GM29327-03
DOGS, SHEEP
\$71,414

Eye Research Institute
of Retina Fdn.
Bireswar Chakrabarti
5R01EY04161-02
CATTLE
\$143,898

**"Determinants of healing
phase of myocardial in-
farction."**

To study healing stages
of heart disease, animals
are subjected to heart in-
jury and are made to exer-
cise.

**"Immunologic studies of
patients after traumatic
injury."**

To study immunological
system after effects of
trauma and burns,
animals are burned,
traumatized.

**"Molecular regulation of
skeletal muscle
catabolism."**

To study effects of nutri-
tion on healing, animals
receive unspecified in-
juries.

**"Fuel oxidation and
storage during parenteral
nutrition in trauma."**

To study effects of nutri-
tion and hormones after
trauma and shock,
animals receive
unspecified trauma, and
are made to exercise.

**"Trauma — regulators
and modulator of the
catabolic state."**

Breeding animals for
previously mentioned ex-
periment.

**"Lens proteins - changes
due to cataractogenic
agents."**

To study development of
cataracts, animals receive
eye injuries and treat-
ment.

Eye Research Institute
of Retina Fdn.
Charles Cintron
5R01EY01199-11
RABBITS
\$170,899

**"Corneal wound
healing."**

To study wound healing,
using fetal and healing
corneas.

Cambridge

Massachusetts Inst.
of Technology
Ioannis V. Yannas
5R01GM23946-08
CATTLE,
GUINEA PIGS
\$174,638

**"Design and evaluation
of an artificial skin."**

To develop techniques in
engineering a genetically
based artificial skin,
animals are burned and
skin is transplanted.

Harvard Univ.
J. Allan Hobson
5R01MH13923-17
CATS
\$107,197

**"Neural mechanisms of
sleep cycle control."**

Electrode recording and
drug injections into the
brain to determine if
there is a central control
system which regulates
dreaming and sleep.

Harvard Univ.
William H. Morse
5R01MH07658-22
MONKEYS
\$156,110

**"Drug action on
behavior controlled by
noxious stimuli."**

Effects of various drugs
on behavior which is
controlled by unspecified
"noxious stimuli," in-
cluding shock.

Harvard Univ.
Susumu Ito
5R01AM30303-03
GUINEA PIGS,
SWINE
\$199,915

**"Mechanisms of injury
and rapid repair of
gastric mucosa."**

To study gastric ulcer
formation, animals have
their intestines removed
to be studied in the
laboratory.

Harvard Univ.
Morris J. Karnovsky
2R01HL17747-10
RATS
\$307,567

**"Endothelial injury and
regeneration."**

To study wound healing,
using diet, microsurgery
and study of the blood
vessels.

Harvard Univ.
Roger D. Spealman
R01DA02658-04
MONKEYS, RATS

**"Behavioral action of
nicotine."**

Following injection of
nicotine and other drugs,
electric shock and food
deprivation are applied
to study behavior.

S-664