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OMB APPROVED
0579-0036

This report is required by law (7 U.S.C. 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.

Interagency Report Control No. 0180-DCA-AN

Fiscal Year: 2009

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

REGISTRATION NUMBER: 23-R-0033

Customer Number: 337

2. HEADQUARTERS RESEARCH FACILITY *(Name and Address, as registered with USDA, include ZIP Code)*

Childrens Hospital Of Philadelphia
3515 Civic Center Blvd.
Philadelphia, PA 19104

Telephone: (215) 590 3800

3. REPORTING FACILITY *(List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets if necessary.)*

FACILITY LOCATIONS *(Sites)* *See Attached Listing*

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY *(Attach additional sheets if necessary or use APHIS FORM 7023A.)*

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress on these animals and the reasons such drugs were not used must be attached to this report.)*	F. TOTAL NUMBER OF ANIMALS (Cols. C + D + E)
4. Dogs	4	1	29	0	30
5. Cats	0	0	0	0	0
6. Guinea Pigs	0	0	0	0	0
7. Hamsters	0	0	0	0	0
8. Rabbits	2	55	71	0	126
9. Non-human Primates	0	76	60	0	136
10. Sheep	0	0	32	0	32
11. Pigs	1	0	9	0	9
12. Other Farm Animals					
13. Other Animals					

ASSURANCE STATEMENTS

1.) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2.) Each principal investigator has considered alternatives to painful procedures.

3.) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). **A summary of all such exceptions is attached to this annual report.** In addition to identifying the IACUC approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4.) The attending veterinarian for this research facility has appropriate authority to ensure the provisions of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer (C.E.O.) or Legally Responsible Institutional Official (I.O.))
I certify that the above is true, correct, and complete (7 U.S.C. Section 2143).

(b)(6), (b)(7)c

TE SIGNED
11/30/09

DEC 01 2009

APHIS Form 7023 Site Addendum for FY: 2009

Registration Number: 23-R-0033
Customer ID Number: 337

Facility Business Address Information:

Childrens Hospital Of Philadelphia
3515 Civic Center Blvd.
Philadelphia, PA 19104

Telephone: (215) 590 3800

Facilities Site(s) Address Information:

Site Code(s):

001

(b)(2)High, (b)(7)f

Assigned Inspector: Joel Rubin, V M D

Registration #23-R-0033
The IACUC has approved protocols that require multiple survival surgeries:

Procedure for monitoring these activities:
Monitoring plans are developed and approved by the IACUC on a protocol-by-protocol basis. Veterinary technicians observe all animals at a minimum once daily. All husbandry staff monitor animals during the course of their daily activities, and any animals in need of care are brought to the attention of the Attending Veterinarian and/or the veterinary technicians.

Protocols approved for multiple survival surgeries:

a) A protocol is approved to study urinary bladder function following partial bladder outlet obstruction and its reversal in a rabbit model (09-289). Animals undergo partial bladder outlet obstruction (pBOO) and bladders are examined at six different time points. After approximately 2 (early correction) or 4 (late correction) weeks, animals undergo a second surgery to remove the pBOO and a bladder biopsy is performed. The goal of these studies is to determine whether early or late correction of pBOO has an effect upon subsequent bladder function, and to correlate any observed differences with molecular analysis. The importance of having the biopsy at the time of reversal is that it allows for a direct comparison of the tissues from the same animal at two different time points once the obstruction has been reversed and the outcome of the reversal is known. **No animals were used for this reporting period involving multiple survival surgeries.**

b) A protocol is approved to study in utero hematopoietic cell transplantation and prenatal and postnatal engraftment enhancement techniques in a canine model (09-707). At gestational day 37, fetuses undergo in utero bone marrow transplant. In utero bone marrow transplants are performed via ultrasound-guided injections when possible but may require a laparotomy. Bitches deliver puppies naturally, but if necessary, for medical reasons, the IACUC has approved performing C-sections to protect the bitch or the fetuses. Between one and six months of age, some of these puppies undergo skin grafting to assess immune tolerance. In a different aim, similar studies involve fetal in utero bone marrow transplant at gestational day 37, and between one and six months of age, these animals receive a second postnatal bone marrow transplant. The transplantation of bone marrow and hematopoietic stem cells into fetal recipients holds promise for the therapeutic management of many congenital hematologic and immune deficiencies. Transplantation of bone marrow at a prenatal time point takes advantage of the immunologic immaturity of the fetal recipient and theoretically allows for unrelated bone marrow transplantation without the toxic immunosuppression required after postnatal transplantation. **No animals were used for this reporting period involving multiple survival surgeries.**

c) A protocol is approved to determine if delivery of the iNOS gene via gene-coated stent can be used to prevent the development of in-stent restenosis by eliminating neo-intimal proliferation within stented pulmonary arteries in a swine model (06-788). Initially an animal model of proximal left pulmonary artery stenosis and pulmonary valve insufficiency is created. Six weeks later, each animal undergoes a cardiac catheterization to deploy a gene-coated stent into the stenotic pulmonary artery. One month following stent placement, the animals undergo a second cardiac catheterization to evaluate for in-stent restenosis. **This protocol was terminated by the investigator on 10/1/09. No animals were used for this reporting period involving multiple survival surgeries.**

d) [redacted] (b)(4) [redacted] **This protocol was terminated by the investigator on 10/1/09. No animals were used for this reporting period involving multiple survival surgeries.**

e) A protocol is approved to study in utero hematopoietic cell transplantation and analyze the benefit of differing injection techniques, pre-injection donor cell manipulations, selective myeloablation of the recipient, and postnatal enhancement strategies in a canine model (09-848). At gestational day 33-50, animals undergo a laparotomy for in utero hematopoietic cell transplantation (IUHCT) injections to evaluate differing injection techniques (transuterine ultrasound-guided intraperitoneal, transuterine ultrasound-guided intrahepatic, transuterine ultrasound-guided intravascular, and transuterine ultrasound-guided intracardiac injection). A non-survival repeat laparotomy is performed 24 hours, 96 hours or 14 days following the in utero hematopoietic cell transplantation injection for fluorescent cell injection analysis. In case of dystocia, a C-section is approved by the IACUC to protect the bitch or the fetuses. Some of the puppies may undergo skin grafting to assess immune tolerance. **No animals were used for this reporting period involving multiple survival surgeries.**

f) A protocol is approved to study fetal lung gene therapy techniques in a sheep model (09-878). Animals undergo a laparotomy and hysterotomy to perform temporary fetal tracheal occlusion with surgical suture and administration of viral vector into the lung lumen. Approximately 7-10 days later, a laparotomy and hysterotomy are repeated to remove the fetal tracheal occlusion to ensure fetal survival. The overall goal is to deliver viral vector to fetal ovine lung via direct intra-tracheal injection to determine whether viral vectors have the ability to provide long-term transduction of the fetal lung. The ability to transfer therapeutic genes to the fetal lung has unlimited potential in development of prenatal strategies for lethal lung. **No animals were used for this reporting period involving multiple survival surgeries.**

Food or Fluid Restriction

Experimental situations that require food restriction:

Title of Experiment	Justification	Species	Length of Restriction
1. Cardiac Valvuloplasty in Fetal Sheep (08-604)* 2. Post-Infarction Ventricular Remodeling in Fetal Sheep (07-803) 3. Fetal Lung Gene Therapy in Sheep (09-878)*	Prevention of vomiting and aspiration of stomach contents during anesthetic induction of pregnant sheep.	Sheep	Food withheld for 12-48 hours prior to surgery with unrestricted access to water.

*** No animals were used for this reporting period.**

→ **Number of Sheep Affected for this Reporting Period: 31**
(6 were fasted for 24 hours; 25 were fasted for 48 hours)

Variables that are monitored to ensure animal health during the restricted period.

When sheep are fasted for 12-48 hours, a form is placed on the cage where urine/fecal output is noted daily. If a decrease in fecal or urine output is noted, the Attending Veterinarian and/or a Veterinary Technician is notified.

Steps taken to ensure adequate nutrition/hydration during the restricted period.

The sheep are allowed free access to water at all times. We have not observed detrimental effects in the sheep from food restriction, and have a low rate of complications with survival sheep fetal surgeries.