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

See reverse side for additional information.

Interagency Report Control (NO 0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE

1. REGISTRATION NO. 74-F-0001 CUSTOMER NO.

FORM APPROVED OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA, Inducte Zip Code)
 AIR FORGE RESEARCH LAB
 2509 KENNEDY CR

2509 KENNEDY CR VETERINARY SCIENCES DIVISION BROOKS AF BASE, TX 78235-611

202

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

AIR FORCE RESEARCH LAB

| BROOKS AF BASE, TX 78235 | | | | | |
|---|--|--|--|---|--|
| | | | | | |
| REPORT OF AHMALS USED BY | OR UNDER CONTROL C | F RESEARCH FACALITY | (Attach edittional sheets if hece. | HAIN OF USE APPLIS FORM 7023A) | |
| A. Animala Covered By The Animal Welfara Regulations | Humber of envirable being brad, conditioned, or held for use in teaching, teeling, experiments, research, or surgery but not yet used for such gurposes. | C. Number of animals upon which leaching, research, exportments, or tasts were conducted involving no pain, distress, or use of pain- ontains drives | D. Humber of animals upon which experiments, leaching, research, surgery, or lests were conducted involving accompanying pain or distress so the animals and for which appropriate anisativate, amagisetic, or tranquittizing drugs were teach | E. Number of animals upon which leaching, experiments, research, surgery or tests were conducted involving accompanying path or distinss to the solviete and for which the use of appropriate sneethed, analyses, or tempolitizing drugs would have adversely affected the procedures, research, experiments, surgery, or tests, of histoprelation of the leaching, research, experiments, surgery, or tests, (An explanation of the procedures producing path or distinses in these animals and the reasons such drugs were not used out to be seenable to the second. | F. TOTAL NO. OF AMBAALS (Cols. C+ D+E) |

FACILITY LOCATIONS(1401)

| | yel used for such purposes. | use of pein- ratioving drugs. | tranquitizing drugs were used. | animals and the reasons such drugs were not used must be associated to this report) | |
|------------------------|--------------------------------|----------------------------------|--------------------------------|--|------|
| 4. Dogs | | | | 16 | 15 |
| 5. Cets | | | | | |
| 6. Guinea Pigs | | | | | |
| 7. Hamsters | | | | | |
| 8. Rabbits | | 3 | 8 | - | 9 |
| 9. Non-Human Primetes | 10 | 15 | 89 | 5 | 118 |
| 10. Sheep | | | | | |
| 11. Pips | | | 187 | | 187 |
| 12. Other Farm Animals | | | | | |
| | | | | | |
| 13. Other Animala | | | | | |
| Mice | | | 409 | 885 | 1094 |
| | | | | | |

Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anisathetic, analysis and tranquisting drugs, prior to, during, and following actual research, feeching, leating, surgery, or experimentation were followed by this research lackity.

383

26

- 2) Each principal evvestigator has considered alternatives to painful procedures.
- 3) This leadity is adhesing to the standards and regulations under the Act, and it has required theil exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the institutional Animal Core and Use Committee (IACUC), A summery of all the exceptions is attached to this animal report, in addition to identifying the IACUC-approved exceptions, this summery includes a brief explanation of the exceptions, as well as the species and number of animals affected.
- The eldending votentians for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other inspects of animal care and use.

31

| | CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL (Chief Executive Officer or Legally Responsible Institutional official) I certify that the above is true, correct, and complete (7 U.S.C. Section 2143) | | | | |
|---|---|---------------------------|--|--|--|
| | SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL (Type or Print) | DATE SIGNED 11/18/2004 | | | |
| 3 | | | | | |

Rats

Frogs

ASSURANCE STATEMENTS

616

28

See mveres side for additional information.

Interagency Report Control No 0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE 1. REGISTRATION NO. 74-F-0001

FORM APPROVED OMB NO. 0579-0038

CONTINUATION SHEET FOR ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

AIR FORCE RESEARCH LAB 2509 KENNEDY CR VETERINARY SCIENCES DIVISION BROOKS AF BASE, TX 78235-511

1433

2. NEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA,

| Animals Covered By The Animal Welfare Regulations | Humber of enimals being bred, conditioned, or held for use in leaching, seeing, experiments, research, or surpey but not | C. Number of grienals upon which basching, research, separiments, or lests were conducted involving no pain, disfress, or | (Attach additional sheets if neces) D. Humber of primate upon which experiments, leaching, research, surgery, or teats were conducted traching pain or distress to the primate and for which appropriate anasonatic, savingssic, or transpillating drug were | E. Number of enimals upon which leaching, expeniments, research, surgery or leats were conducted involving eccompanying pain or distress to the enimals and for which the use of appropriate anexthetic, sneapeaks, or tranquitizing drugs would have adversely effected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or leats. (Air explanation of the procedures producing pain or distress in these surreats and the reasons such drugs were not used. | F. TOTAL NO OF ANIMAL (Cols. C + D + E) |
|---|--|---|---|---|---|
| | yet used for such purposes. | use of pelo- relieving drugs. | ивесі. | must be attached to this report) | 25 |
| Snakes | | 10 | 15 | | 2.3 |
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- 1) Professionally acceptable straderds governing the care, treatment, and use of animals, including appropriate use of anisathetic, analysis; and tranquitting drugs, orier to, during, and following actual research, teaching, lessing, surgery, or experimentation were followed by this research facility.
- 2) Each principal investigator has considered alternatives to paintui procedures.
- 3) This lacelty 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 invastigator and approved by the institutional Animal Care and Use Committee (IACUC). A summary of all the exceptions is attached to this annual report. In addition to identifying the IACUC-approved acceptions, this summary includes a brief explaination of the exceptions, as well as the species and number of animals effected.
- The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other appears of animal care and use.

| Ì | CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL | |
|---|---|---|
| | (Chief Executive Officer or Legally Responsible Institutional official) | |
| 1 | I certify that the above is true, correct, and complete (7 U.S.C. Section 2143) | |
| ı | SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL. NAME & TITLE OF C.E.O. OR INSTITUTIONAL OFFICIAL (Type or Print) DATE SIGNED | D |
| 1 | | |
| | 11/16/2004 | |
| 1 | | |

APHIS Form 7023 Column E Explanation

| use is voluntary. Names, addresses, protocol | s, veterinary care programs, and the like, are not required as part of an written so as to be understood by lay persons as well as scientists. | TIES |
|--|--|------|
| Registration Number: | 74-F-0001 | |
| 2/3. Species (common name) & Number of a | nimals used in this study: | |

4. Explain the procedure producing pain and/or distress.

Dogs will be exposed to a non-lethal weapon systems (b)(2) ____which penetrates the skin of its target to a depth of approximately 0.3 mm, leading to intense, momentary pain and escape/flight

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 6 below)

The question that this proposed research is designed to answer is: DWhat is the effect of a specific form of momentary and escapable pain on the behavior of a dog, specifically a military working dog. 11 More specifically, the key question is: Odoes this type of pain impact in the short D or long-term the MVDDs trained behavior? In order to answer these questions, an awake, alert, and unaffected (by use of analgesics, tranquilizers, etc) dog must be used. This is a study in which the use of anesthetics and/or analgesics would be contraindicated.

6. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) title number and the specific section number (e.g., APHIS, 9 CFR 113.102):

Agency: None.

Dogs (15)

CFR:

APHIS Form 7023 Column E Explanation

This form is intended as an aid to completing the APHIS Form 7023 Column E explanation, it is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A Column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration Number:

74-F-0001

2/3. Species (common name) & Number of animals used in this study:

Non-Human Primates (5)

4. Explain the procedure producing pain and/or distress.

Monkeys are required to perform a continuous compensatory tracking task, on the primate equilibrium platform (PEP). By the nature of this aversively motivated task performance, the subject must avoid or escape the aversive stimulus (mild tail shock) by meeting the performance requirements of the task.

Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 6 below)

The criterion for shock delivery is set so that trained animals can easily perform for many hours without experiencing a shock. Many animals voluntarily experience an occasional shock to filest the system is i.e., to ascertain whether they are still being required to perform. This demonstrates the necessity of maintaining the shock contingency and the mildness of the distress involved. Attempts to train similar performance under appetite motivation (food reward) for successful performance are counterproductive. Such training has been attempted and was found to take at least 4 to 10 times longer to produce a final performance that is much less stable than that attained by aversively motivated subjects.

What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) title number and the specific section number (e.g., APHIS, 9 CFR 113.102):

Agency: None.

CFR:

| 2/3. Species (common name) & Number of animals used in this study: | | | | | |
|--|---|--|--|--|--|
| Mice (685) | | | | | |
| 4. Explain the procedure producing pain a | and/or distress. | | | | |
| Mice will be infected with (b)(2) placing drops of spore suspension on tinfection can produce pain/distress. | will be delivered to the lungs by the tip of the nose and allowing inhalation write under anesthesia. Resulting | | | | |
| | and/or distress could not be relieved. State methods or means used to determine terfere with test results. (For Federally mandated testing, see Item 6 below) | | | | |
| The use of analgesics is not justified sin | nce this may be a confounder in the progress of infection, | | | | |
| What, if any, federal regulations require number and the specific section number | e this procedure? Cite the agency, the code of Federal Regulations (CFR) title or (e.g., APHIS, 9 CFR 113.102): | | | | |
| Agency: None. | CFR: | | | | |
| Approval Status: Approved/Disapproved By: Date: | | | | | |
| Disapproved Reason: | | | | | |
| | | | | | |

1. Registration Number: 74-F-0001 / 1433

| 1. Registration Number: 74-F-0001 / 1433 2/3. Species (common name) & Number of animals used in this study: Rats (202) 4. Explain the procedure producing pain and/or distress. 1. Rats will be exposed to millimeter waves, environmental heat, and infrared heating. They may experience pain the recovery period but will not be given routine analgesia. 2. Rats will be given kainto acid injections as a necessar positive control for neuronal damage. 5. Provide scientrific justification why pain and/or distress could not be relieved. State methods or means used to deter that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see item 6 below) 1. Routine administration of analgesia to the recovery animals will not be used because pain and distress is expect be minimal and the analgesic is very likely to confound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of acid to induce neurodegeneration leads to seizures. While the kainto acid seizures are not painful, there may be a distress associated with the prodromal period associated with an oncoming seizure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavous contents of the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: Approval Status: Approved/Disapproved By: Date: Disapproved Reason: | | |
|--|--|--|
| 4. Explain the procedure producing pain and/or distress. 1. Rats will be exposed to millimeter waves, environmental heat, and infrared heating. They may experience pain the recovery period but will not be given routine analgesia. 2. Rats will be given kainlic acid injections as a necessar positive control for neuronal damage. 5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to deter that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see item 6 below) 1. Routine administration of analgesia to the recovery animals will not be used because pain and distress is expect be minimal and the analgesic is very likely to confound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of said to induce neurodegeneration leads to selzures. While the kalinic acid selzures are not painful, there may be a distress associated with the prodromal period associated with an oncoming selzure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavoided. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) this number and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: | Number: 74-F-0001 / 1433 | |
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| 1. Rats will be exposed to millimeter waves, environmental heat, and infrared heating. They may experience pain the recovery period but will not be given routine analgesia. 2. Rats will be given kainlic acid injections as a necessar positive control for neuronal damage. 5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to deter that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see item 6 below) 1. Routine administration of analgesia to the recovery animals will not be used because pain and distress is expected minimal and the analgesic is very likely to comfound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of lidentified as moribund or lin noticeable pain or distress will be immediately and humanely euthanized. 2. The use of distress associated with the prodromal period associated with an oncoming selzure are not painful, there may be a distress associated with the prodromal period associated with an oncoming selzure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavoid. 6. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) this number and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: | | |
| the recovery period but will not be given routine analgesia. 2. Rats will be given kainlo acid injections as a necessar positive control for neuronal damage. 5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to deter that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see item 6 below) 1. Routine administration of analgesia to the recovery animals will not be used because pain and distress is expected by minimal and the analgesic is very likely to confound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of acid to induce nerurodegeneration leads to selzures. While the kelnic acid selzures are not painful, there may be a distress associated with the prodromal period associated with an oncoming selzure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavoided. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) titinumber and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: Approval Status: Approved/Disapproved By: Date: | procedure producing pain and/or distress. | |
| that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see item 6 below) 1. Routine administration of analgesia to the recovery animals will not be used because pain and distress is expected be minimal and the analgesic is very likely to confound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of scid to induce neurodegeneration leads to selzures. While the kelnic acid seizures are not painful, there may be significant distress associated with the prodromal period associated with an oncoming selzure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavoided. 6. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) titinumber and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: Approval Status: Approved/Disapproved By: Date: | period but will not be given routine analgesia. 2. Rats will be given kair | |
| be minimal and the analgesic is very likely to confound the results of the assays used in this study. Animals that an identified as moribund or in noticeable pain or distress will be immediately and humanely euthanized. 2. The use of acid to induce neurodegeneration leads to selzures. While the kalnic acid setzures are not painful, there may be a distress associated with the prodromal period associated with an oncoming setzure. Induction of neurodegeneration necessary to the protocol. Because of the nature of the system being studied, some pain and discomfort are unavoured. 8. What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) titinumber and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: Approved Status: Approved Status: Approved Disapproved By: Date: | | |
| number and the specific section number (e.g., APHIS, 9 CFR 113.102): Agency: None. CFR: Approval Status: Approved/Disapproved By: Date: | nd the analgesic is very likely to confound the results of the assays use moribund or in noticeable pain or distress will be immediately and huma e nerurodegeneration leads to selzures. While the kainle acid selzures sciated with the prodromal period associated with an oncoming selzure. | ed in this study. Animals that are anely euthanized. 2. The use of kainic a are not painful, there may be some . Induction of neurodegeneration is |
| Approval Status: Approved/Disapproved By: Date: | federal regulations require this procedure? Cite the agency, the code of the specific section number (e.g., APHIS, 9 CFR 113.102): | of Federal Regulations (CFR) title |
| Approved/Disapproved By: Date: | e. CFR: | |
| Disapproved Reason: | roved By: | A A CONTRACTOR OF THE CONTRACT |
| | son: | |
| | | |