Column E Explanation
Federal year 2019

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1. Registration Number: *57-R-0005*

2. Number of animals categorized as column E in this study. *4*

3. Species (common name) of animals used in the study. *Ferret*

4. Explain the procedures producing pain and/or distress. Explanations should include a brief description of the procedures, but also explain what the animals experience, examples of which may include, but are not limited to: Neurological signs, seizures, tremors, paralysis, lethargy, inappetance, respiratory signs, GI distress, vomiting, and diarrhea.

Animals were challenged with Mycobacterium tuberculosis

Animals experienced: weight loss, lethargy, and respiratory symptoms such as increased respiratory rate and dyspnea.

5. Attach or include the reason(s) for why anesthetics, analgesia and tranquilizers could not be used. (For Federally mandated testing, see item 6 below).

A review of the literature using Medline and Pubmed revealed that there were no appropriate alternatives that did not interfere with the scientific objectives of this research. Administration of treatment, anesthesia, analgesia, or early euthanasia will interfere with the collection of research data. Early euthanasia may confound results that we need to determine if the ferret will be an effective transmission model. Also, treatment of clinical disease with tuberculocidal drugs will also inhibit effective acquisition of necessary data.

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, 9CFR 113.102):

If the requirement is per a guidance document, such as an Agency notice or harmonization guideline, please provide specific sufficient information to identify the cited document.

NA

UGA FY2019

Exceptions/Exemptions to the AWA Regulations

1. **Sec. 2.33 - Attending veterinarian and adequate veterinary care**

The IACUC approved an observation protocol of white-tailed deer which may not include a daily visual check of every deer. The protocol is as follows:

Daily, personnel inspect all deer in barn stalls, patrol outside pens to verify that deer are healthy, and inspect facilities for structural integrity and the safety of animals. Given the wild nature of white-tailed deer versus domestic livestock, it is not possible to visually inspect each deer to verify its presence during every inspection. Reading the ear tags of each deer is difficult as they move away from the observer. Personnel carefully move through pens to minimize stress to animals during inspections. Using binoculars and by encouraging deer through narrower areas of pens, personnel inspect deer daily for normal gait, behavior, and physical appearance. Quarterly, all animals are counted in each paddock. Deer that are sick will not move with the herd and often allow people to approach to closer distances. A quarterly report on the number of deer found sick or dead during the daily inspections as well as the totals from the quarterly counts is submitted to the IACUC for review.

All of the deer in the deer facility during this time were affected: 71

2. **Sec. 3.1, Housing facilities, general; 3.2 – Indoor housing facilities**

The IACUC approved the use of carpeted flooring in a laboratory to which dogs are taken for gait analysis, as the carpet helps to obscure the force measuring plates, allowing for an undisturbed gait when crossed. Soiled carpet is spot cleaned immediately, and a log documenting quarterly cleanings is maintained by the lab.

All dogs brought to the lab during this time were affected: 4

3. **Sec. 3.84 Cleaning, sanitization, housekeeping, and pest control (Nonhuman Primates)**

The IACUC approved a 15-day period between cage changes/sanitation in instances where adherence to the 14-day schedule is complicated due to the social pairing process or for experimental reasons.

All of the Nonhuman Primates housed in the NHP Core during this time were affected: 122

4. **Sec. 3.128 – Space Requirements**

The IACUC approved the use of ferret caging that does not necessarily allow for fully upright posture. The plastic from which this caging is constructed weighs significantly less than the taller steel caging, minimizing occupational/ergonomic risk to husbandry personnel. The plastic caging allows for more light to enter the enclosures as well, allowing for better routine observation of the animals compared to the taller steel caging. Ferrets are housed in this caging for two periods of 23 and 17 days (40 days in total) with at least 10 weeks between periods.

All ferrets that received sequential influenza infections during this time were affected: 458

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1. Registration Number: *57-R-0005*

2. Number of animals categorized as column E in this study. *3*

3. Species (common name) of animals used in the study. *Ferret*

4. Explain the procedures producing pain and/or distress. Explanations should include a brief description of the procedures, but also explain what the animals experience, examples of which may include, but are not limited to: Neurological signs, seizures, tremors, paralysis, lethargy, inappetance, respiratory signs, GI distress, vomiting, and diarrhea.

Animals were challenged with influenza virus

Animals experienced: Signs of influenza, such as weight loss, lethargy, and mild respiratory signs such as sneezing and nasal discharge

5. Attach or include the reason(s) for why anesthetics, analgesia and tranquilizers could not be used. (For Federally mandated testing, see item 6 below).

A review of the literature using Medline and Pubmed revealed that there were no appropriate alternatives that did not interfere with the scientific objectives of this research. Administration of treatment, anesthesia, analgesia, or early euthanasia will interfere with the collection of research data. As a part of monitoring disease, animals are monitored for weight loss, activity and lethargy. Treatment of mice and ferrets with analgesics can alter these endpoints, which are aspects of criteria for euthanasia. Moreover, the anti-inflammatory activity of analgesics would interfere with pathology studies, a key endpoint in these studies. Finally, the side effects of some analgesics such as opioids used to alleviate pain can include respiratory depression and vomiting which would be an added concern to the welfare of the animals

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, 9CFR 113.102):

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NA

27 NOV 2018

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1. Registration Number: *57-R-0005*

2. Number of animals categorized as column E in this study. *40*

3. Species (common name) of animals used in the study. *Ferret*

4. Explain the procedures producing pain and/or distress. Explanations should include a brief description of the procedures, but also explain what the animals experience, examples of which may include, but are not limited to: Neurological signs, seizures, tremors, paralysis, lethargy, inappetance, respiratory signs, GI distress, vomiting, and diarrhea.

Animals were challenged with influenza virus

Animals experienced: Signs of influenza, such as weight loss, lethargy, and mild respiratory signs such as sneezing and nasal discharge

5. Attach or include the reason(s) for why anesthetics, analgesia and tranquilizers could not be used. (For Federally mandated testing, see item 6 below).

A review of the literature using Medline and Agricola revealed that there were no appropriate alternatives that did not interfere with the scientific objectives of this research. Administration of treatment, anesthesia, analgesia, or early euthanasia will interfere with the collection of research data. Analgesics cannot be used as they may alter critical data and endpoints. In addition, analgesics can result in respiratory depression and vomiting which would further confound the study and increase animal distress.

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, 9CFR 113.102):

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NA

27 NOV 2019

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(b) (4)

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1. Registration Number: *57-R-0005*

2. Number of animals categorized as column E in this study: 7

3. Species (common name) of animals used in the study: *Pig*

4. Explain the procedures producing pain and/or distress. Explanations should include a brief description of the procedures, but also explain what the animals experience, examples of which may include, but are not limited to: Neurological signs, seizures, tremors, paralysis, lethargy, inappetance, respiratory signs, GI distress, vomiting, and diarrhea.

Animals have a surgically induced stroke.

Animals were treated with analgesia and tranquilizers for all of the expected surgery and stroke symptoms. 5 pigs were unable to stand on their own within 48 hours, and were euthanized as per humane endpoints. 2 pigs were unable to stand after surgery, and may have had seizures before death; necropsy suggested herniation as the cause of death.

5. Attach or include the reason(s) for why anesthetics, analgesia and tranquilizers could not be used. (For Federally mandated testing, see item 6 below).

A review of the literature using Medline and Pubmed revealed that there were no appropriate alternatives that did not interfere with the scientific objectives of this research. Administration of treatment, anesthesia, analgesia, sedation and tranquilization are not withheld. However, early euthanasia would interfere with the collection of research data about the level of physical and functional repair over time as a result of the stem cell and/or nanoparticle therapy, so pigs are required to be maintained for extended periods for MRI, gait, and behavioral testing.

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, 9CFR 113.102):

If the requirement is per a guidance document, such as an Agency notice or harmonization guideline, please provide specific sufficient information to identify the cited document.

NA