OMB APPROVED
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Interagency Report Control No. 0180-DOA-AN

Fiscal year:

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

Annual Report of Research Facility
Column E Explanation

(TYPE OR PRINT)

This information is required by law (7 U.S.C. 2143 and 9 C.F.R. §2.36). Failure to report according to the regulations can result in an order to cease and desist.

1. REGISTRATION NUMBER

52-R-0011

2. Research Facility Headquarters address

University of Virginia, Office of VP for Research
P.0. Box 400301
Charlottesville, VA 22904

3. Number of animals used in the study.

181

4. Species (common name) of animals used in the study.

Rabbit (infant bunny)

5. Explain the procedure producing pain and distress.

This is a study of *Shigella flexneri* dysentery in a neonatal rabbit model. The bacterium is administered intra-rectally in isoflurane anesthetized bunnies less than 1 O days of age. The bacterium is genetically engineered to study the role of various virulence genes in party by quantifying the severity of inflammation and expression of cytokines associated with the ensuing dysentery.

6. Provide the scientific justification for not providing the appropriate anesthetics, analgesics, or tranquilizing drugs during procedures where the animal experienced accompanying pain or distress greater than momentary or slight.

Opiates are due to the changes they cause in gastrointestinal motility. Nonsteroidal anti-inflammatory drugs are not administered because of their influence on inflammation, which is quantified as part of the experiment.

7. 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):

None

Agency	**CFR**

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Hamsters

5. Explain the procedure producing pain and distress.

There are three studies of infectious diseases that use hamsters as a model for human dsease. One study is of enterotoxogenic Clostr!dium difficile examining the role of eosinophils and some cytokines that ameliorate the clinical symptoms of diarrhea and dehydration. The hamsters are euthanized if they lose 20% or more of their body weight during the course of infection.

The second two studies use a hamster mode! of SARS-CoV-2 (Covid-19). Hamsters are given SARS CoV-2 by either an intra-nasal or intra-tracheal route to test of the efficacy of candidate vaccines or therapeutic treatments during the ensuing infection. The hamsters are euthanized if they lose 20% of their body weight or show severe signs of respiratory distress.

6. Provide the scientific justification for not providing the appropriate anesthetics, analgesics, or tranquilizing drugs during procedures where the animal experienced accompanying pain or distress greater than momentary or slight.

In the *Clostridium difficile* experiments no non-steroidal anti-inflammatory analgesia is provided as this is a study that quantifies inflammation, and administering opioids would change gastrointestinal motility.

In the SARS CoV-2 experiments no non-steroidal anti-inflammatory analgesia is provided during that time as this is a study that quantifies pulmonary inflammation, and whole body plethysmography is performed to quantify components of breathing and administering opioids would depress respiration.

7. 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):

None

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Pig

5. Explain the procedure producing pain and distress.

This study is mapping the pain pathway of swine from the periphery to the reticular system through the spinal cord and midbrain. Once specific pain pathways are identified, they are lesioned using focused ultrasound, which is a non-invasive manner to do some brain procedures. This is being tested as a method to interfere with chronic pain perception.

6. Provide the scientific justification for not providing the appropriate anesthetics, analgesics, or tranquilizing drugs during procedures where the animal experienced accompanying pain or distress greater than momentary or slight.

Since the intent of the study is to map pain pathways in swine, analgesics and non-steroidal anti-inflammatory drugs directly interfere with the mapping procedure.

7. 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):

None

Agency	CFR