ANIMAL CARE AND USE PROTOCOL

Oklahoma State University Center for Health Sciences
Institutional Animal Care and Use Committee
1111 W 17th St, Tulsa, OK 74107
918-561-1400

READ ALL SECTIONS FOR INSTRUCTIONS. Answer all questions. Answer NA if the question does not apply. Complete electronically. No hand-written versions accepted. Submit 1 fully signed original AND submit the electronic version to the IACUC Administrator.

SECTION 1

1.1. Protocol Identification

Protocol Title:			Protocol Number (number assigned by IACUC after approval):	
			Protocol Type: ☐ Research ☐ Student Special ☐ Teaching ☐ Pilot	Protocol Class: ☐ Biomedical ☐ Field Study
Principal Investigator/Instructor Name:	Department:		Address:	
Office Phone:	Lab Phone:	Emergency Phone:	E-mail:	
Alternate Contact Person:	Office Phone:	Lab Phone:	Emergency Phone:	E-mail:

1.2. Investigator/Instructor Assurance Statements

Pursuant to applicable Federal laws and regulations, Oklahoma Statutes, and Oklahoma State University Policies and Procedures:

I affirm that all use of vertebrate animals in Oklahoma State University sponsored research, teaching, and/or testing programs shall be covered by an Animal Care and Use Protocol (ACUP) that has been reviewed and approved by the Oklahoma State University Institutional Animal Care and Use Committee (IACUC) and that IACUC approval shall be obtained prior to ordering animals and/or performing any animal procedures described therein.

I affirm that any proposed changes in personnel, species, usage, animal procedures, anesthesia, post-operative care, or biohazard procedures that will significantly impact upon the animal portion of the study will be reported in writing to the IACUC in the prescribed format and that IACUC approval shall be obtained prior to performing the revised animal procedures described therein.

I affirm that unauthorized deviation from an approved ACUP is grounds for suspending/terminating the protocol and may result in disciplinary action.

I affirm that the OSU Attending Veterinarian may perform unannounced inspections and observations of animal quarters and/or experimental procedures and that the OSU Attending Veterinarian is authorized to humanely euthanize animals that are found to be experiencing severe pain and/or distress that cannot be relieved and/or unilaterally suspend an approved protocol pending full IACUC review. ***(NOTE: The OSU Attending Veterinarian will make a concerted effort to contact the PI and/or his/her designated staff prior to initiating such action.)***

I affirm that all use of biohazardous materials and/or radiological materials must be reviewed and approved by the applicable Oklahoma State University Institutional safety officials/committee. Failure to follow those approved protocols may result in withdrawal of authorization to conduct research/teaching/testing at Oklahoma State University.

I affirm that I have considered alternatives to the use of live animals in research, teaching, or testing.

I affirm that the activities/methods/procedures described herein do not unnecessarily duplicate previous experiments.

I affirm that all animal procedures described herein that may cause more than momentary or slight pain or distress will be performed with appropriate sedatives, analgesics, or anesthetics unless scientifically justified and approved by the IACUC; that paralytics will not be used without anesthesia; and that I have consulted the OSU Attending Veterinarian or other veterinarian in planning/developing the regimen to alleviate pain/distress.

I affirm that personnel performing animal manipulation, experimental techniques, surgery, etc. are or have been adequately trained and proficient prior to performing those procedures.

I affirm that the ACUP contains sensitive information and is not to be released to unauthorized individuals.

I affirm that the information contained herein does not materially conflict with and/or deviate from information contained in related grant proposal documents submitted to extramural funding agencies listed in the protocol.

By signing this protocol the principal investigator/instructor certifies that he/she has read and agrees to abide by the assurance statements listed above and the Oklahoma State University Institutional Policies governing the use of animals in research, teaching, and/or testing programs.

Principal Investigator Signature:	**Date:**

1.3. Departmental Approval

By signing this protocol the department head certifies that resources and facilities are available for this proposed animal use protocol.

Department Head:	Department:
Signature:	**Date:**

1.4. Protocol Approval ☐Approved

Attending Veterinarian	**Signature:**	**Date:**
Chair	**Signature:**	**Date:**
Institutional Official	**Signature:**	**Date:**

SECTION 2 – Administrative/Management Data

2.1. Non-Technical Summary/Abstract: (**Briefly** summarize in clear and simple terms that a **NON-SCIENTIST** can understand the protocol objectives, animal species used, and potential benefits. This information may be used for press releases and/or responses to Freedom of Information Act (FOIA) requests. It is appropriate to copy and paste the abstract and specific aims from a grant proposal).

2.2. Funding Source(s):

Source(s)	Type
	Choose an item.
	Choose an item.
	Choose an item.

2.3. Personnel Performing Animal Procedures: (List research team members {including PI}, laboratory personnel, and/or instructional staff.) ***Please attach documentation of training of all personnel to this protocol

For each person listed, the experience/training column should be relevant to the species and procedures being used/performed and should include years of experience with that species.

Name	Position	Degree(s)	General Procedures	Surgery/ Anesthesia	Euthanasia

2.3.1. List/describe any additional specialized training needs and who will conduct the training:

2.4. Requested Animal Species and USDA Pain Category Information: (Put total number needed for three years. Each animal species is categorized by the most painful procedure that it will be subjected to.)

USDA Pain Category Definitions:

Category B: Animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.

Category C: Are procedures that cause minimal, transient, and/or no pain/distress when performed by competent persons using recognized

methods. (i.e. NO PAIN)

Category D: Are procedures that cause more than minimal/transient pain/distress where the pain/distress is alleviated by the use of anesthetics, analgesics, or tranquilizers. (i.e. PAIN ALLEVIATED)

Category E: Are procedures that cause more than minimal/transient pain/distress WITHOUT the use of anesthetics, analgesics, or tranquilizers to alleviate the pain/distress. (i.e. UNALLEVIATED PAIN) **MUST BE SCIENTIFICALLY JUSTIFIED – SEE 3.2.4.**

Criteria	1st Species	2nd Species	3rd Species
Common Name			
Scientific Name (*Genus species*)			
Strain/Stock/Breed			
Age			
Weight Range			
Sex			
Source (Name and location; if other protocol, provide #)			
Number Purchased/Donated			
Number Produced In-House			
Number from Other Protocols			
Number Trapped/Wild Caught			
Number Other			
SPECIES TOTAL			
Number in USDA Category B			
Number in USDA Category C			
Number in USDA Category D			
Number in USDA Category E			

2.5. Animal Facilities: (Enter the IACUC approved buildings and room numbers where animals will be housed/ used as applicable.)

Species	Housing/Holding Areas		Non-Surgical Procedures		Survival Surgery		Non-Survival Surgery	
	Bldg(s).	Room(s)	Bldg(s).	Room(s)	Bldg(s).	Room(s)	Bldg(s).	Room(s)

SECTION 3 – Protocol Narrative Description

3.1. Literature Searches: **(A minimum of two databases are required to be searched for each.** List of some suggested databases.)

3.1.1. Search for Non-Animal Alternative Methods: (Search results summary should include what non-animal alternative methods were found [if any] and why they were not suitable for use in this protocol.)

Database Searched:	Search Date:	Years Covered:
Keywords:		
Search Results Summary:		

Database Searched:	Search Date:	Years Covered:
Keywords:		

Search Results Summary:

3.1.2. Search to Avoid Unnecessary Duplication:

(**RESEARCH PROTOCOLS:** The search summary field should include what was found & why this study does not duplicate previous work &/or why it is necessary to repeat previously published work. **TEACHING/TESTING PROTOCOL:** The "Database Searched" field should be marked NA & the rest of the fields left blank.)

Database Searched:	Search Date:	Years Covered:
Keywords:		
Search Results Summary:		

Database Searched:	Search Date:	Years Covered:
Keywords:		
Search Results Summary:		

3.1.3. Search for Alternative Methods to Pain/Distressful Procedures:

(Complete if any animal use is in USDA Category D or E. The "Database Searched" field should be marked NA and the rest of the fields left blank if all animal use is in USDA Category C.)

Database Searched:	Search Date:	Years Covered:
Keywords:		
Search Results Summary:		

Database Searched:	Search Date:	Years Covered:
Keywords:		
Search Results Summary:		

3.2. Animal Model Justification:

3.2.1. Justification/Rationale for Using the Species/Strains/Stocks/Breeds Listed in 2.4.:

(Briefly describe why each species/strain/stock/breed listed in 2.4. was chosen for use in this protocol.)

3.2.2. Justification/Rational for Using the Number of Animals Listed in 2.4.:

(Briefly describe how the number of animals per experimental/control group or the number of students per animal was arrived at [e.g., statistical sample size calculation, basis for determining the student: animal ratio for each block of instruction, etc.] and clearly show how the total number of animals listed was arrived at.)

3.2.3. Justification for Not Alleviating Pain/Distress:

(Required for all USDA Pain **Category E** Procedures.)

3.2.4. Justification for Using Death as an Endpoint:

(The use of death as an endpoint in animal experiments is strongly discouraged. However, in some cases, death may be a necessary component of the study [e.g., LD_{50} studies]. Investigators conducting such a study must provide strong scientific justification to the IACUC for using death of animals as the experimental endpoint. **Death as an endpoint does not include euthanasia at the end of a study. Death as an endpoint implies that the study results in death of the animal without investigator intervention.)

3.3. Animal Husbandry:

☐ This section is not applicable for the following reason(s):

3.3.1. Housing/Caging:

(Check all boxes that apply.)

☐NA for the following reason:

Facility: ☐Conventional ☐ABSL-2 ☐Other:

Cage Type: ☐Standard shoebox ☐Aseptic Microisolator ☐Microisolator ☐Metabolic ☐Other:

Bedding: ☐Contact ☐Non-contact ☐None

Density (recommended max capacity on pg. 57 in the Guide): ☐Group housed ☐Individually housed

Special Requirements/Explanation/Justification (Describe any nonstandard caging/housing systems and provide scientific justification for housing rodents in wire bottom cages.):

3.3.2. Feeding: (Check all boxes that apply.)

☐NA for the following reason:

Type: ☐Standard commercial diet ☐Autoclaved ☐Irradiated ☐Medicated/Treated ☐Purified/chemically defined diet ☐Semi-purified diet

Method: ☐ Ad libitum ☐Controlled feeding regimen ☐Food restriction

Special Requirements/Explanation/Justification (Describe all semi-purified/purified diets, medicated/treated diets, controlled feeding regimens, food restriction, and any other special feeding requirements or practices. Nutritional studies/feeding trials should also be briefly described here.):

3.3.3. Watering: (Check all boxes that apply.)

☐NA for the following reason:

System: ☐Standard Water bottle ☐Other:

Type: ☐Standard purified water ☐Acidified ☐Autoclaved ☐Chlorinated ☐Medicated/Treated ☐Municipal tap water ☐R/O ☐Other:

Method: ☐ Ad libitum ☐Controlled feeding regimen ☐Water restriction

Special Requirements/Explanation/Justification (Describe all use of medicated/treated water, controlled watering regimens, water restriction, and any other special watering requirements or practices.):

3.3.4. Non-Standard Environmental Parameters: (Describe any special temperature, humidity, noise, or lighting requirements.)

3.4. General Animal Procedures/Manipulations/Restraint: (List and briefly describe all non-surgical animal procedures/manipulations [e.g., weighing, sexing, dosing, injections, etc.] and the restraint methods [physical or chemical] that will be used for each of the listed procedures/manipulations that are not addressed in 3.5.-3.7. below.)

3.5. Tissues to be Collected Post-Mortem: (Briefly describe what post-mortem procedures [necropsy, collection of tissues, etc.] will be performed. List the tissues to be collected.)

3.6. Blood Sampling/Collection: (Briefly describe the method of physical restraint, route, volume, frequency of sampling, and anesthetic use.)

3.7. Animal Disposition: (Check all that apply. If more than one box is checked, use the "Other" box to clarify which animals fall into each category.)

☐ Euthanasia

According to the *AVMA Guidelines on Euthanasia* (2013), acceptable agents/methods of euthanasia for rodents and other small mammals are barbiturates, injectable barbiturate in conjunction with local anesthetics, and dissociative agents (e.g. ketamine, ketamine/xylazine combination). Conditionally acceptable methods are techniques that may require certain conditions to be met to consistently produce humane death, may have greater potential for operator error or safety hazard, are not well documented in the scientific literature, or may require a secondary method to ensure death; Conditionally acceptable methods for rodents include inhaled anesthetics, CO_2, CO, tribromoethanol, ethanol, cervical dislocation (mice and rats < 200 g), decapitation, and microwave irradiation. Please refer to the *AVMA Guidelines on Euthanasia* for further information.

Drug/Agent/Method	Concentration	Dose	Route of Administration
Brief description of each euthanasia method listed above:			

☐ External Transfer to Non-OSU Entity (e.g., sale, adoption, etc.) (Transfer must be processed through AR.)

☐ Internal Transfer to Another OSU Protocol/AR Holding Colony (Transfer must be processed through AR.)

☐ Release Back to Wild

☐ Other:

3.8. Disposal of Animal Carcasses/Body Parts: (Briefly describe how carcasses/body parts/tissues/body fluids will be disposed of.)

SECTION 4 – Appendices

(Check and attach all appendixes that apply.)

☐ Appendix A – Protocol Flow Sheet/ Experimental Design Table/ Course Syllabus/ Testing SOP

☐ Appendix B – Biological Hazards (*Animal Pathogens, CDC Select Agents, Human Pathogens, Recombinant DNA/RNA, Transgenic Animals, USDA Restricted Animal Pathogens*)

☐ Appendix C – Trapping/ Capture of Wild Animals

☐ Appendix D – In-house Breeding Colony

☐ Appendix E – Long-Term Restraint

☐ Appendix F – Surgery

☐ Appendix G – Anesthesia/ Analgesia/ Paralytics/ Tranquilizers/ Sedatives

☐ Appendix H – Antibody/ Ascites Production

☐ Appendix I – Radiation Hazards Summary

☐ Appendix J – Conflict of Interest

☐ Appendix K – Other:

SECTION 5 – References/Bibliography

(List all references that are cited in this protocol and/or are the primary scientific basis for this study. A comprehensive listing of all relevant

scientific literature **is not** required.)