Animal Care and Use Committee For Administration Use Only

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| Protocol No. | Date Received: | Committee Meeting Date: |

**RESEARCH PROTOCOL
New Application Form (Laboratory Studies)**

The use of animals for research is a privilege. Before a protocol to use animals in a research project is approved, the researcher must show that the use of animals is justified, that the project has scientific merit, and that the procedures to which the animals will be subjected will be carried out humanely and in accordance with CCAC standards.

Approved protocols will be valid for a period of 1 year and may be renewed (with minor revisions if required) in years 2, 3 and 4 with re-application in year 5.

Please submit a **signed** **electronic version** of this application to acuc@unbc.ca.

**1. GENERAL INFORMATION**

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| Project Title:  |
| Has this protocol been approved before? [ ]  Yes [ ]  No If yes, please provide previous protocol number:  |
| Is this a collaborative project with another CCAC-certified institution? [ ]  Yes [ ]  No If yes, please attach copies of the application and approval letter from the collaborating institution. |
| Principal Investigator: |  | UNBC Department: |  |
| Position/Rank: |  | Application Date: |  |
| Phone: |  | Email: |  |
| Start Date and Final End Date (i.e., the date it will be completed) of Proposed Project:  |
| Location where study will take place:  |
| CCAC Category of Invasiveness:[ ]  A [ ]  B [ ]  C [ ]  D [ ]  E(see *Definitions* in Section 13 of this document for details) | CCAC Purpose of Animal Use (PAU’s):[ ]  0 [ ]  1 [ ]  2 [ ]  3 [ ]  4 [ ]  5(see *Definitions* in Section 13 of this document for details) |

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| Declaration: I, the undersigned, will ensure that all animals used in this project will be treated and cared for in accordance with the policies and guidelines of the Canadian Council on Animal Care and the requirements of the relevant international, federal, provincial and municipal legislation. I accept responsibility for keeping the information in this application current and accurate and for notifying the Animal Care and Use Committee of any deviations from this proposal.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Principal Investigator Signature Date |

**2. FUNDING AND PEER REVIEW**

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| Funding: [ ]  Internal [ ]  External Agency Name:  |
| Complete Grant Title:  |
| Status: [ ]  Awarded [ ]  Pending Form of Funding: [ ]  Grant [ ]  Contract [ ]  Other (Specify):  |
| Has this proposal for funding received peer review? [ ]  Yes [ ]  No |
| If “No” (above), contact acuc@unbc.ca to request peer review from the UNBC Office of Research and Innovation |
| If “Yes” (above), which agency reviewed this proposal?  |
| If available, please provide Fund / Org and ROMEO numbers:  |

**3. KEY WORD DESCRIPTION – PLEASE CHECK ALL THAT APPLY**

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| General | Procedures | Agents | Surgical |
| [ ]  Acute[ ]  Behavioural Study[ ]  Breeding[ ]  Cell Cultures[ ]  Chronic[ ]  Environmental Protection[ ]  Pilot Study\*[ ]  Reinforcement/Motivation[ ]  Tissue/organ Collection [ ]  Transgenic Animal[ ]  Observational[ ]  Wild Animals[ ]  Other (please specify):  | [ ]  Blood Sampling[ ]  Euthanasia[ ]  Food Deprivation[ ]  Gavaging[ ]  Identification/Marking[ ]  Injections [ ] IP [ ] IV [ ] IM [ ] SQ [ ]  Physical Restraint[ ]  Special Diet[ ]  Trapping/Netting[ ]  Water Restriction[ ]  Other (Please specify):  | [ ]  Anesthetics[ ]  Bio-Hazardous[ ]  Carcinogens[ ]  Chemical[ ]  Infectious[ ]  Immunogenic[ ]  Inflammatory[ ]  Other (Please specify):  | [ ]  Cannulation[ ]  Major[ ]  Minor[ ]  Multiple[ ]  Survival[ ]  Terminal[ ]  Other (Please specify):  |

**\*Note that Pilot Studies are approved for one year only and are not renewable.**

**4. Description of Proposed Research (Lay Summary)**

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| *In lay terms provide a brief description of the research objectives and the procedures to be used.* ***USE LANGUAGE THAT A NON-SCIENTIST CAN UNDERSTAND. MAXIMUM 250 WORDS*.** |

**5. Participants directly involved in the care and use of animals in this project**

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| --- | --- | --- | --- | --- |
| Name | Position | Responsibilities | Contact | Mandatory *Animal Training* Course Completed? |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain: |
| *Describe the qualifications of each participant, including additional training that each participant has received or will receive (e.g., UNBC “Surgery and Anesthesia” course, etc.). Indicate the source of this training.* |

**6. ANIMAL INFORMATION AND HOUSING**

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| ***6.1*** *Identify the total number of each species/strain of animal to be used in this project. If this is a multi-year project where numbers vary from year to year, please provide the total number for each year separately.* |
| Species/strain | Number per year | Supplier/Source |
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| ***6.2*** *Indicate the location (room number(s)) where the animals will be housed:* |
| ***6.3*** *Indicate the location (room numbers(s)) where animal procedures will be conducted:* |
| ***6.4*** *If wild animals are to be used, provide the name of the agency issuing all necessary permits, permit numbers, and attach copies of permits.*[ ]  N/A |
| ***6.5*** *UNBC endeavors to provide an appropriate species-specific enriched environment for the maintenance of all animals during short- and long-term housing.* [ ]  N/A, proceed to Section 7.***6.5.a*** *Using laboratory rodents:*[ ]  N/A, proceed to Section 6.6*Standard mouse housing and husbandry is described in SOP A1-2 “Rodent Husbandry”. All standard mouse cages will receive:** *1 cup of corn cob bedding*
* *¾ cup of crinkle paper*
* *1 nestlet for non-breeding animals, and 2 nestlets for breeding animals*
* *1 plastic house*

*Cages are changed weekly according to SOP A1-2. If this bedding or husbandry regime is not conducive to experiments, please provide proposed changes, and justification.****6.5.b.*** *Optional changes:*[ ]  Rotating enrichment (different materials weekly)[ ]  Trade plastic house for a plastic tunnel[ ]  Add running wheels [ ]  Add balcony [ ]  Add food treats[ ]  Add shred-able autoclaved paper products[ ]  Add shred-able autoclaved wooden tongue depressors[ ]  No additional items added to the cages*Please describe any specific instructions regarding optional items:* |
| ***6.6*** *Using laboratory fish:*[ ]  N/A*Standard housing for laboratory fish will vary from species to species. Please describe, in detail, the housing, enrichment, and tank commissioning plan for laboratory fish. Ensure to include the plan for husbandry.* |

**7. SCIENTIFIC OBJECTIVES**

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| *State the specific scientific objectives and potential benefits of the proposed work.* |

**8. REPLACEMENT, REDUCTION AND REFINEMENT**

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| ***8.1*** *Those using animals should employ the most humane methods on the smallest number of animals to obtain valid information.**Justify the proposed numbers of animals. Use of statistical arguments if necessary.* |
| ***8.2*** *Provide rationale for the choice of species / strain.* |
| ***8.3*** *Non-animal alternatives should be used whenever possible. Explain briefly why any available non-animal alternatives are not suitable for meeting the objectives of this study.* |

**9. PROCEDURES**

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| ***9.1 Describe all experimental and observational procedures on animals.****Include details on surgical procedures, anesthesia, sample collection, tests, and procedures related to the experimental objectives. Describe any marking, tagging, banding, or permanent / temporary identification; include the weight of the equipment as a percentage of expected animal body weight, the impact on the animals including potential long-term effects, and if equipment is to be removed in the future. Use simple language, and do not excerpt pages from grant applications.* |
| ***9.2 Morbidity, mortality, and endpoints****Describe any morbidity (injury) or mortality (death) that could be associated with the procedures listed above, along with mitigation techniques, reporting lines, monitoring, and humane intervention points / endpoints and actions. Please quantify anticipated numbers / percentages of potentially affected animals.*  |
| ***9.3 Monitoring and animal welfare assessments*** *Please describe all monitoring activities and welfare assessments in this protocol. Refer to SOP* G-04 Animal Welfare Assessments *for further information.* |
| ***9.4 Cumulative endpoints / reuse*** *Will animals be transferred to or from this protocol to or from another existing protocol? Please describe precautionary measures to protect the animal’s health and wellbeing if being used multiple times in their lifetime.* |
| ***9.5 Anesthetic/analgesic agents*** *List all anesthetic/analgesic agents to be administered to the animals. Please remember, analgesia should be provided for any potentially painful procedures\*\*.*[ ]  N/A |
| *Species/Strain* | *Agent/Drug* | *Purpose* | *Route**(SQ, IM, etc.)* | *Dosage**(e.g., mg/kg)* | *Amount**(e.g., mL)* | *Frequency* |
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| \*\* If you are *NOT* providing any analgesia, please specify the reason why. |
| ***9.6 Other agents to be administered to animals (indicate bio-hazardous material with \*\*)***[ ]  N/A |
| *Species/Strain* | *Agent/Drug* | *Purpose* | *Route**(SQ, IM, etc.)* | *Dosage**(e.g., mg/kg)* | *Amount**(e.g., mL)* | *Frequency* |
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| ***9.7 Indicate all samples to be taken for each species / strain.***[ ]  N/A |
| *Species/Strain* | *Type of Sample* | *Site* | *Amount* | *Procedure* | *Frequency* |
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**10. HAZARDOUS MATERIALS**

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| [ ]  N/A, no hazardous materials will be used in this study (*Go to Section 11)* |
| ***10.1*** *Indicate which of the following will be used in animals (complete details must be listed in Section 9, marked as \*\*)*[ ]  Infectious agents (includes vectors) [ ]  Toxic chemicals [ ]  Radioisotopes [ ]  Carcinogens[ ]  Transplantable tumors and/or tissues [ ]  Other (please specify):  |
| ***10.2*** *Has the use of hazardous materials been reviewed by the Laboratory Safety Committee?* [ ]  YES [ ]  NO |
| ***10.3*** *Describe potential health risk(s) to humans or animals. Indicate the duration of the effects of the agent.* |
| ***10.4*** *Describe measures that will be used to reduce risk to the environment, the project and animal facility personnel.* |

**11. ENDPOINTS and EUTHANASIA**

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| ***11.1 Endpoints****Endpoints are clear criteria to define the point at which humane intervention must be implemented to prevent or relieve unnecessary pain and/or distress. What are the criteria to terminate the procedure/study and potentially the animal if unanticipated pain and/or distress occur?* |
| ***11.2 Euthanasia****If euthanasia is necessary upon termination of the study, or where pain and/or distress exceeds the threshold, specify the method of euthanasia.****Acceptable methods of euthanasia:*** *Please specify the method of euthanasia.*[ ]  Injection of diluted/buffered barbiturate\* [ ]  Exsanguination with anesthesia[ ]  Decapitation with anesthesia, list agent/dose/route\* [ ]  Maceration (for fish less than 2cm in length)[ ]  Cervical dislocation with anesthesia, list agent/dose/route\* [ ]  Overdose of inhalant anesthetics with C02[ ]  Immersion or injection of buffered TMS/MS222 (Fish/Frogs) [ ]  Clove oil (Fish)[ ]  Other (please specify):\*List agent/dose/route:***Conditionally acceptable methods****: Please specify the method of euthanasia* [ ]  Decapitation *without* anesthesia [ ]  Cervical dislocation *without* anesthesia[ ]  C02 only (Rodents) [ ] Concussion (Fish)[ ]  Other (please specify):*The use of any Conditionally Acceptable Method must be justified. Please explain the reason why this method of euthanasia is required:* |

**12. Emergency Contacts**

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| *Please provide the name and contact information of a veterinarian, the principal investigator and lab manager if consultation is necessary.* |
| Name and Address of Veterinarian |  | Phone Number |  |
| Name of Principal Investigator |  | Phone Number |  |
| Name of Lab Manager (if applicable) |  | Phone Number |  |

**13. DEFINITIONS**

**Description of Purpose of Animal Use (PAUs)**

**0: Breeding Colony/Stock** – Animals held in breeding colonies (e.g., fish, rodents) that have not been assigned to a particular research or teaching protocol.

**1: Fundamental Nature Studies** – Studies of a fundamental nature in sciences relating to essential structure or function (e.g., biology. psycho-biochemistry, pharmacology, physiology, etc.). Possible examples are studies designed to understand: the cellular and/or molecular basis of inflammatory reactions or basic physiological or biochemical reactions; one of the various roles played by a hormone or other compound in mammals; the behavior of species; the population dynamics of various species.

**2: Medical Purposes -** Studies for medical purposes, including veterinary medicine, that relate to human or animal diseases. These are studies carried out to better understand a specific disease or disorder and to possibly find therapies for it. Possible examples: development of a mouse model for a specific type of cancer or other disease; studies to determine which antibodies are the most likely to contribute positively to the therapy of a specific type of cancer; studies to determine which molecule within a particular class of compounds is the most likely to contribute to maintaining stable blood glucose levels in an animal model of diabetes.

**3: Regulatory Testing** - Studies for regulatory testing of products for the protection of humans, animals, or the environment. Possible examples: safety testing, regulatory toxicology, vaccine efficacy trials and testing of new therapeutic compounds.

**4: Development of Products** - Studies for the developmentofproducts or appliances for human or veterinary medicine. These are studies that investigate potential therapies (as determined following studies of PAU 2) for humans or animals, before regulatory testing. PAU 3 is carried out on the most promising therapies. **Possible examples** include studies undertaken to: investigate the role and effects of a specific drug or immunotherapy candidate for cancer; develop physical devices to assist heart function; develop artificial organs.

**5: Education and training** – Education and training of individuals in post-secondary institutions or facilities. These are teaching or training programs where animals are used to introduce students to scientific work and teach manual skills and techniques.

**Category of Invasiveness\***\*(Excerpt from the 1991 CCAC policy statement on: Categories of Invasiveness in Animal Experiments)

**A: Experiments on most invertebrates or on live isolates**. **Possible examples** are the use of tissue culture and tissues obtained at necropsy or from the slaughterhouse; the use of eggs, protozoa or other single-celled organisms; experiments involving containment, incision or other invasive procedures on metazoa.

**B: Experiments which cause little or no discomfort or stress.** **Possible examples:** domestic flocks or herds being maintained in simulated or actual commercial production management systems; the short-term and skillful restraint of animals for purposes of observation or physical examination; blood sampling; injection of material in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral, but not intrathoracic or intracardiac (Category C); acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness prior to euthanasia; short periods of food and/or water deprivation equivalent to periods of abstinence in nature.

**C Experiments which cause minor stress or pain of short duration. Possible examples:** cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies, laparoscopy; short periods of restraint beyond that for simple observation or examination, but consistent with minimal distress; short periods of food and/or water deprivation which exceed periods of abstinence in nature; behavioural experiments on conscious animals that involve short-term, stressful restraint; exposure to non-lethal levels of drugs or chemicals. Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, fecal or urinary output, or in social responses. Note: During or after Category C studies, animals must not show self-mutilation, anorexia, dehydration, hyperactivity, increased recumbency or dormancy, increased vocalization, aggressive-defensive behaviour or demonstrate social withdrawal and self-isolation.

**D: Experiments which cause moderate to severe distress or discomfort. Possible examples:** major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioural stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization; the use of Freund's Complete Adjuvant (FCA) (see CCAC policy statement on: acceptable immunological procedures). **Other examples** include induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; the production of radiation sickness; exposure to drugs or chemicals at levels that impair physiological systems. Note: Procedures used in Category D studies should not cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioural patterns or attitudes, the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or disinclination to move, and clinical signs of severe or advanced local or systemic infection, etc.

**E: Procedures which cause severe pain near, at, or above the pain tolerance threshold of an unanesthetized conscious animal.** This Category of Invasiveness is not necessarily confined to surgical procedures, but may include exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress; completely new biomedical experiments which have a high degree of invasiveness; behavioural studies about which the effects of the degree of distress are not known; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on unanesthetized animals; a euthanasia method not approved by the CCAC; any procedures (e.g., the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (e.g., when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint).