The University of British Columbia

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View: 1. Study team

1. STUDY TEAM - ANIMAL CARE COMMITTEE

* ***1.1.*** Click for Guidance Notes Please select the Principal Investigator (PI) for the study. The PI is responsible for all aspects of the work conducted under this protocol. Once you hit "...", you can enter the PI's name, or enter the first few letters of his or her name and hit "Go". You can sort the returned list alphabetically by First name, Last name, or Organization by clicking the appropriate heading. Fred Woo	The Principal Investigator must have a Faculty Appointment (i.e. Professor, Associate Professor, Assistant Professor, Clinical Associate Professor, Clinical Assistant Professor, Professor (PT), Associate Professor (PT), Assistant Professor (PT), Professor Emeritus/a, Associate Professor Emeritus/a, Assistant Professor Emeritus/a). This includes Clinical Faculty appointments in the Faculty of Medicine. If this is a Teaching protocol, please list the Principal Supervisor. If you cannot see your name in the Principal Investigator list and you are the Principal Investigator of the study, please contact the RISe Support Desk at risesupport@ors.ubc.ca.
1.2. Click for Guidance Notes *Provide the name of ONE primary contact person in addition to the PI who will receive ALL correspondence regarding this application. This primary contact will have online access to read, amend, and track the application.*	Selecting a primary contact is optional. If a primary contact is not selected, the PI will be the only person to receive all correspondence. The certificate of approval and notifications regarding the application will be emailed to this primary contact in addition to the PI.

	If the primary contact is also a study team member, please ensure they are listed in Section 1.4.
Complete sections 1.3, 1.4 and 1.5 to add Co-Investigators and study team members directly involved in the care and use of animals in this study and designate their access for this study. ***To add** Co-Investigators in 1.3 and study team members in 1.4:* *1. Click "**...**".* *2. Enter the name or enter the first few letters of the person's name and click "Go".* *3. You can sort the returned list alphabetically by First name, Last name, or Organization by clicking the appropriate heading.* *4. Select the boxes beside ALL applicable names and click "OK".* ***To delete** a person from the list, click "**x**".* Click for Guidance Notes ***1.3 Co-Investigators:*** *List all Co-Investigators of the study. These members WILL have online access to read, amend and track the application.* **Last Name** **First Name** **Institution/Department** **Rank** There are no items to display	To meet the Canadian Council on Animal Care (CCAC) requirements, training is mandatory. The CCAC/NIAUT Training is required for all individuals listed on an animal care application. Registration information can be found at https://animalcare.ubc.ca/training/ccac-ethics-online. The relevant practical courses offered through Animal Care Services are also mandatory. Registration information can be found at www.animalcare.ubc.ca. When completed, please update your profile on RISe with the certificate numbers Please make sure you have added yourself as either the Principal Investigator, primary contact, co-investigator or a study team member in order to continue with the application. If you do not see your name or any of your associates' names in the list, please have them added or inform them to add themselves by contacting the Office of Research Services at risesupport@ors.ubc.ca with their particulars (name, department, rank, email, UBC employee number (if applicable), and phone number). Once added to RISe, the new user will

	receive an email with his or her researcher number.
Click for Guidance Notes ***1.4. Study Team Members*** *All study team members must be listed here and have an up-to-date RISe account, which will contain their online and practical training certificate numbers. Study team members will have online access to read, amend and track the application. Please note that changes cannot be submitted without PI action and consent. All study team members are required to read and adhere to the final approved AUP. The procedures performed by each study team member must be defined in section 4.8b (4.4b Breeding form).* To delete a person from the list, click "**x**". **Last Name First Name Employer Rank** There are no items to display	To meet the Canadian Council on Animal Care (CCAC) requirements, training is mandatory. The CCAC/NIAUT Training is required for all individuals listed on an animal care application. Registration information can be found at https://animalcare.ubc.ca/training/ccac-ethics-online. When completed, please update your profile on RISe with the certificate numbers The relevant practical courses offered through Animal Care Services are also mandatory. Registration information can be found at www.animalcare.ubc.ca. Your profile on RISe will automatically be updated. Please make sure you have added yourself as either the Principal Investigator, primary contact, co-investigator or a study team member in order to continue with the application. If you do not see your name or any of your associates' names in the list, please have them added or inform them to add themselves by contacting the Office of Research Services at risesupport@ors.ubc.ca with their particulars (name, department, rank, email, UBC employee number (if applicable), and phone number). Once added to RISe, the new user will receive an email with his or her researcher number. Please note that users who are UBC faculty,

	students or staff are now able to self-register for an account in RISe.
Click for Guidance Notes * ***Nickname of the Study.*** *What would you like this study to be known as to the Principal Investigator and Study team?* ACC Teaching Protocol	The name entered here will be what the study is known as on your home page, to the Principal Investigator and the Study Team. This title will not be printed on the certificate. Funding titles are requested on next page.

To save information on each view as you are working, especially if you are working on the view for a long period of time, select the "Save" button located at the top OR bottom of the view in the blue bar. Your work on each view will automatically be saved once you hit the "Continue" button.

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View: 2. Funding Information

2. STUDY DATES AND FUNDING - ANIMAL CARE COMMITTEE

Click for Guidance Notes

2.1. *What is the start date and proposed duration of this study? Use the calendar box to select the dates(Internet Explorer). The start date must be defined as a date after which the protocol is approved.*

* ***2.1.a***

Start Date:
4/30/2019

* **2.1 b**

How long do you anticipate this study will continue?
1 year

The date provided should identify when the research project(s) described under this protocol will begin. Please do not provide a date that is prior to when the protocol might be approved. For this reason, when considering this start date you must account for the time needed for preparation, submission and review of the protocol as well as the time required to address provisos. Based on historical data you should anticipate that 2 weeks will be needed from the date of ACC review; assuming no major provisos are identified. The proposed duration of your study is also required. For example, some studies will start in January and be completed within four months, while other studies may be completed over the full four years that the protocol covers.

The format in which the date is displayed may be different from

	the one used for entry. This depends on the settings of your computer and/or software.
Click for Guidance Notes ***Source of Funds*** *Please clearly identify the application for research funding associated with this ethics application. This will ensure that awarded research funds can be made available to you once this ethics application receives approval.* *Section 2.2 lists the sources of all research funding applications that have been submitted by the PI and Co-Investigators on this study. To identify the research funding application/award associated with this study select the applicable box(es) below.* *If the research funding application/award associated with this study is not listed below, please enter those details in question 2.3.* *To delete a Research Funding Application from the list below, click "**x**".* ***2.2.*** *Research Funding Application/Award Associated with the study:* **UBC Number Title Funding PI Sponsor** There are no items to display	Section 2.2 lists the research funding applications/awards that have been submitted to the UBC Office of Research Services and entered into our database. Identifying the associated research funding application/award will ensure that awarded research funds will be made available to you once this ethics application receives approval. **Please ensure you select the correct application. Note that the first two digits of the application number indicate the year the application was submitted (eg. Application #F14-00001 was submitted in 2014).**
2.3. *Please click "Add" to enter the details for the research funding application/award associated with this study that is not listed in section 2.2.*	

Research Funding Application/Award Associated with the study not listed in section 2.2: **Title** **Agency** There are no items to display	
Click for Guidance Notes ***2.4.*** *Is the associated research funding application/award listed in sections 2.2. or 2.3. from either industry sources or from internal UBC funding opportunities?* Yes	Please note if the funding source supporting the research is from Industry then an external 3rd party peer review of the proposed studies must be completed prior to approval of this protocol. Note: there is fee for service for industry funded projects. Payment is required prior to protocol approval.

To save information on each view as you are working, especially if you are working on the view for a long period of time, select the "Save" button located at the top OR bottom of the view in the blue bar. Your work on each view will automatically be saved once you hit the "Continue" button

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View: 3. Animal Information & Type of Animal Review

3. ANIMAL INFORMATION & TYPE OF ANIMAL REVIEW - ANIMAL CARE COMMITTEE

Click for Guidance Notes ***3.1.*** *Please provide the names of **at least two** Emergency Personnel with **24 hour contact information** by selecting "Add". To delete someone from the list, select "***x***". To view additional contact numbers for that person, select the "Update" button in front of his or her last name.* **Last Name** / **First Name** / **Department / Division** / **Contact Number** There are no items to display	Please enter associates who have online access to RISe in section 3.1 List at least two (2) people who can be contacted in case of an emergency and their 24 hour contact numbers. The personnel listed need to be familiar with the project and should be listed in sections 1.3, 1.4 or 1.5. Every effort will be made to reach designated personnel; however, if an animal is in pain and/or distress and no one can be reached, the animal may be treated for symptoms or euthanized by the veterinarian without prior approval from designated people. Ensure the people listed are aware they are the emergency contact. For wildlife studies, this section is not required.

* ***3.2.*** *Please select which of the following Canadian Council on Animal Care (CCAC) keywords that apply to your study using the "**...**" button to view the list. If these do not apply to your study, please select Not Applicable from the list. To delete a keyword from your list, select the "**x**" next to the keyword.* **Keywords** Not Applicable	
Click for Guidance Notes * ***3.3.*** *Purpose of Animal Use:* 5	Choose the item (0-5) that best describes the purpose of animal use: **0.** Animals held in breeding colonies **1.** Studies of a fundamental nature in sciences relating to essential structure or function (e.g. biology, psychology, biochemistry, pharmacology, physiology, etc). **2.** Studies for medical purposes, including veterinary medicine, that relate to human or animal disease or disorders. **3.** Studies for regulatory testing of products for the protection of humans, animals, or the environment. **4.** Studies for the development of products or appliances for human or veterinary medicine. **5.** Education and training of individuals in post-secondary institutions or facilities.
Click for Guidance Notes	Pilot Project studies are approved for 3 months with the

* ***3.4.*** *Please select type of application* Teaching	possibility of a 3 month renewal. The Committee understands there are often cases when additional information is needed (e.g. study design, appropriate endpoints, or testing procedures) prior to proceeding with a full study. In these cases, an application for a pilot project can be submitted. Pilot Project studies are treated as expedited and do not require full committee review. They are approved for a limited number of animals and for three (3) months with the possibility of one three (3) month renewal. *A short-term research project with a limited number of animals does not constitute a pilot project by the Committee's definition.*
Click for Guidance Notes ***3.5.*** *If this application is a renewal/continuation of a previous study, provide the application number of the previous study and attach a brief progress report.* * ***3.5.a*** *Is this application a renewal/continuation of a previous study?* No ***3.5.b*** *Application number from previous study:*	Please attach a progress report, describing any complications encountered relative to animal use (unpredicted outcomes, and any animal pain, distress or mortality), a brief report on the adequacy of the endpoints for the protocol, and on any complications encountered or refinements made relative to protecting animals from pain, distress or mortality and, any progress made with respect to the Three Rs of replacement, reduction and refinement of animal use.

3.5.c *Please select "Add" button to attach a progress report for the previous study:* **Title** There are no items to display	Include the number of animals used in the preceding year. If this is a renewal of a breeding application, list both the number of animals transferred to research protocols as well as the number of surplus animals. If this application is a new protocol, but there is direct experience with the procedures described, please consider providing a report containing information as outlined above.

To save information on each view as you are working, especially if you are working on the view for a long period of time, select the "Save" button located at the top OR bottom of the view in the blue bar. Your work on each view will automatically be saved once you hit the "Continue" button.

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View: 4. Animal Information, Procedures, Justification (Teaching)

4. ANIMAL INFORMATION, PROCEDURES, JUSTIFICATION - ANIMAL CARE COMMITTEE

Click for Guidance Notes

4.1 Pedagogical Merit Review

4.1.1 Briefly describe the work involving animals. Specify if this is a demonstration or a hands-on activity. What are the educational objectives and learning outcomes of the animal-based work?

* *4.1.2 How will you evaluate if a student has met the learning objective associated with the use of animals?*
x

* *4.1.3 Do students have the appropriate skills and knowledge to participate and benefit from the animal-based teaching in this course? Please explain.*
What is the ratio of student per animal? What is the ratio of student to instructional staff?
x

* *4.1.4 What alternatives are available (software, simulations, etc.) that could replace the use of animal and achieve the learning outcomes? Please describe the search strategy used to identify alternatives. If alternatives are available, please justify why they cannot be used.*
x

* *4.1.5 Describe how the ethics and responsibilities associated with animal use at UBC will be addressed.*
x

* *4.1.6 Describe how you will be gathering student feedback on the effectiveness of using animals to achieve the educational goals? Please attached any relevant documentation (evaluation forms).*
x

Attachment:

In accordance with CCAC guidelines, all animal-based teaching or training courses must have a formal pedagogical merit review to determine if animal-based methods are essential to meeting learning objectives and outcomes. Your request for using animals in a course will undergo an internal peer review to determine its pedagogical merit. Please complete the questions 4.1.1 to 4.1.6.

Click for Guidance Notes * ***4.1.a.*** *Objectives of Research* *Research Applications: Describe how you would explain to a non-scientist, the aim, specific objective(s) and potential value of your study with respect to human or animal health, the advancement of knowledge or the good of society. Briefly describe the relationship of the animal studies to the overall objectives of your research. DO NOT exceed 500 words.* *Teaching Applications: State why animals must be used in the laboratory/project. If alternatives to animals are available, indicate why they cannot be used in this instance.* x * ***4.1.b.*** *As well, please briefly describe in simple language the procedure(s) performed so that the Community Members reviewing this section understand what is being done to the animals. Please do not submit the abstract from your funding application. The summary should provide the requested information in lay terms, so that someone who is unfamiliar with your work will be able to appreciate what you do. DO NOT exceed 500 words.* x	This section is meant for the general public and does have the potential of being released to the public. Define the problem being addressed in the proposed animal studies in a context that someone in the general public would understand. This section is used by the lay members of the Committee to help them understand what is acutally being done to the animals under the protocol. This section also has the potential to be released to the public. A general description of the animal work should be provided in simple language suitable for a general audience.
Click for Guidance Notes ***4.2.*** *Alternatives to animal use. What alternatives to the use of live animals have been considered? What reasons did you have for rejecting them? If specific alternatives do not exist, this should be stated or justified appropriately.* x	In this section, the user should explain why animals must be used and indicate if there are suitable alternatives available. If alternatives to animals are available, indicate why they cannot be used in this study. Reviewing the CCAC website on alternatives when considering the 3Rs (Replacement, Refinement, Reduction at http://3rs.ccac.ca/en/) may be helpful.
Click for Guidance Notes * ***4.3.*** *Please complete the following Animal Information by selecting "Add". To delete an item listed below, select "**x**".*	Please list the number of animals required per year **not** per study. If applicable, please indicate how many of each strain is required. Note, pups need to be included in animal numbers.

	Species	Strain	COI	Animal Vendor	Animal Numbers Requested / Year	Housing Location	Experiment Location	Experiment Rm No.	Wild Animals Used	Threatened Species
View	Birds - Other	Zebrafinch	B		2	Bioscience Building (Zoology)				

If your project includes wild or field studies, please list the location of the study in the experimental room number field.

Animals must be housed within a UBC Animal Care facility. Should alternative animal holding/housing be required, you can find it here to print off and complete a request. Once the form is complete you must scan the document and attach it in this section.

Note: Separate protocols must be submitted for work involving different species. Rodents (rats, mice, etc.) may be combined onto one protocol, but larger species (pigs, rabbits, sheet, etc.) must all have individual protocols.

Click for Guidance Notes

* ***4.4.***

Justify both the choice of species and strain. List all strains which will be used. Have other species and strains been considered? If a strain exhibits a specific phenotype that affects the animal's welfare over time indicate what changes are expected and when they may arise. Please describe if there are any phenotypic changes that will negatively impact the welfare of the animal. If there are changes, then ensure this is captured in the monitoring information described in section 5.

x

For rodent strains, etc. please include information on why this strain is best suited to your research (e.g. we have chosen CBA inbred mice because they are resistant to diet-induced atherosclerosis which is important in this research).

Click for Guidance Notes

* ***4.5.***

Justify the proposed numbers to be used by indicating how the numbers were determined, explaining why these numbers are needed. To help those reviewing please consider attaching a spreadsheet breaking down the animal use. If you have power calculations justifying the n number for specific experiment and control groups please provide this.

x

If required use "Add" to attach documents, graphs or charts for justification of numbers.

Title

There are no items to display

The justification of numbers should include the number of **animals per year** as listed in 4.3, as well as the **number of animals required for the project duration** (no more than 4 years). For example, if you listed 1000 mice per year in section 4.3 for a two year study, please also justify the 2000 mice required for the project duration.

The number of animals used should employ the most humane methods

	using the fewest number of an appropriate species required to obtain valid information. Please describe in detail how the proposed animal numbers were generated to accomplish both of these needs. Numbers justification may be shown in an attached table format indicating the animal numbers per group and the number of groups as defined in specific studies. Where applicable statistical design and/or sample size values should be included.
Click for Guidance Notes ***4.6.*** *Will animals be singly housed during this study for any period of time? If yes, please clearly provide justification and duration. (e.g. a couple of hours following the procedure until the animals are fully recovered; following surgery to prevent the animals from pulling suture (up to 7 days); male mice which are fighting (permanently separated). Please indicate "no" or "NA" if no single housing occurs (i.e. do not leave this section blank).*	Most laboratory animals should not be housed singly, as chronic or even temporary isolation impairs behavioral well-being. For proposed single housing, describe the exceptional circumstances for which animals need to be housed singly, as well as the duration of such housing. Describe the proposed measures for meeting the social requirements of the isolated animal (e.g. increased human contact).
Click for Guidance Notes * ***4.7.*** *Please attach below OR describe your facility SOP(s) on environmental enrichment. If your facility does not have an SOP indicate what your standard environmental enrichment is (e.g. for rodents hiding places/huts, nesting material). If enrichment is not applicable for your study indicate "not applicable" and the reason, for example "field studies".* x SOP(s) on environmental enrichment **Title** There are no items to display	Environmental enrichment should allow an animal to perform its normal behaviors and create a stimulating environment for the animals. The best environmental enrichment is usually a conspecific. Minimal mouse housing would include nesting material and a hiding place. Note: food, water, bedding, are NOT considered enrichment - this is part of the standard care for housing animals.
Click for Guidance Notes * ***4.8.A.***	The procedure details should be sufficient to ensure that the reader understands what will happen to the

Provide DETAILED description of procedures involving animals. Sufficient detail should be provided so that one can understand what will happen to an individual animal throughout your study. Details of specific procedures can be either detailed here or listed in existing SOPs (see below) but the flow of what will happen to an individual animal throughout the study should be understandable.

This section may be supplemented by listing and clearly naming and identifying SOPs and attaching them (in 4.9) or other documents and can also include flow charts and diagrams to help the reviewers of this protocol understand what will be done to the experimental animals. If multiple procedures/treatments are to be done to an individual animal, please clearly explain which animals will have which procedures/treatments and in what sequence.

All survival surgery must be done using aseptic techniques. Surgery must be performed within the animal facility in a suite especially designated for this purpose, unless justified as determined by the Animal Care Committee.

x

This section may be attached as a word document, especially when including flow charts and diagrams.

Title

There are no items to display

animal from the point the animal arrives in the lab until the end of the study. There needs to be sufficient detail for the reviewer to assess the humaneness concerns.

ttt ttt

All procedures must comply with any relevant Animal Care Committee Policies. To view these policies select here.

Procedural policies include:

Policy 006 - Policy on Acceptable Methods of Rodent Blood Withdrawal
Policy 010 - Monoclonal Antibody Production
Policy 011 - Restricted/Deficient Diets For or Fasting of Animals
Policy 012 - Neuromuscular Blocking Agents
Policy 016 - Policy On Survival Surgery Of Rodents

Approved SOPs can be found at https://animalcare.ubc.ca/planning-your-research/sops-guidelines

Approved SOPs include but are not limited to:
Rodent Anesthesia
Survival Surgery
Genotyping

All survival surgery must be done using aseptic techniques.

DO NOT include non-animal experimental detail.

If **wildlife animals** are being used select here to view the guidelines.

Further information on the care and use of wildlife animals can be found here.

Click for Guidance Notes

4.8.B.

Identify which procedures, described in 4.8.A, each person listed below will perform. Click each person's name in order to add this information. The UBC rodent training courses completed by each person will autopopulate and will indicate which procedures requiring mandatory training each person has been certified to perform. Give level of qualification or training for each person for the procedures not covered by the mandatory UBC rodent training.

Study Member	CCAC/NIAUT Training	ACC Training Courses	Procedures Described in 4.8.A Performed by Individual	ACS Certified for Physical Euthanasia
Fred Woo	000			no

For each person listed, **please indicate which of the in vivo animal procedures described in section 4.8A they will perform, as well as all the relevant training and ACS training certification they have received.** Completed UBC rodent based training certification will automatically populate once the study team member has completed the course. If a UBC rodent based training course is required for a procedure, it must be successfully completed before a study team member can perform that procedure. UBC rodent based training is species specific and each person's required training depends on the procedures that individual will perform. Required training includes Introduction to Working with Rodents in Research, Rodent Restraint and Injection, Introduction to Rodent Anesthesia, Introduction to Aseptic Surgery, Rodent Gavage and Rodent Intravenous Tail Vein Injection. To sign up for UBC training courses or to request specific training on procedures that are not a require course, please go to https://animalcare.ubc.ca/training/acs-online-lab-rodent-courses. A person will only be permitted to perform the procedures associated with their name and for which they have appropriate training and expertise. If a person is not listed in this section, they will not be permitted to perform any in vivo animal procedure.

For procedures in which there is not a required course, please provide the training and expertise of the person for that procedure.

Example:

John Smith	Mouse saphenous blood collection - 6 years experience Rat saphenous blood collection – 2 years of experience

For study team members who have completed the ACS rodent based training courses prior to 2009, the certificate numbers may not autopopulate. Competency level information was not determined prior to 2015 so competency level information will not be available for those courses. If you have any questions regarding required courses or completed courses and competencies, please contact train.acs@ubc.ca.

Click for Guidance Notes

4.8.C.

Please describe morbidity and mortality for each procedure listed above.

Experimental morbidity may include:
- Illness, distress or pain associated with the model (e.g. diabetes, colitis or tumor models) or related to the strain.

Strain related morbidity may include:
- C57BL/6 mice develop malocclusion and hydrocephalus
- Illness, distress or pain associated with non-study related conditions such as fight wounds, ulcerative dermatitis, aging or other

	spontaneous disease. Mortality may include: - Anesthetic-related death - Toxicity due to drug administration - Infectious disease processes - Unknown strain related disease
4.9.A. *Select any UBC ACC SOPs used in the protocol from the drop down list below by selecting the "**...**" button.* **ID** **Title** There are no items to display	The UBC ACC SOPs are encouraged to be used. If the SOPs are not being used exactly please specify the modifications in 4.8.A.
Click for Guidance Notes ***4.9.B.*** *Are you referencing any approved PI specific SOPs in this application?* ○ Yes ● **No** *If yes, please attach the SOP(s) here by selecting "Add"* **Title** There are no items to display	
4.9.C*.* *For non-ACC approved SOPs and other documents attach here* **Title** There are no items to display	

To save information on each view as you are working, especially if you are working on the view for a long period of time, select the "Save" button located at the top OR bottom of the view in the blue bar. Your work on each view will automatically be saved once you hit the "Continue" button.

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View: 5. Animal Monitoring

5. ANIMAL MONITORING - ANIMAL CARE COMMITTEE

5.1. Click for Guidance Notes

Please specify FOR EACH STUDY/SURGERY/PROCEDURE:

1. what specific clinical signs or objective parameters will be monitored to assess animal health
2. the frequency (number of times per day) and duration (number of days) that animals will be monitored

Please specify whether monitoring is conducted by study team members, facility staff or both. If monitoring is not necessary/applicable, this should be stated and explained.

For Categories of Invasiveness D & E and a subset of C, monitoring records are required. Please attach monitoring/scoring records that are to be filled out during the study. These should include humane endpoints.

name	description

There are no items to display

Adequate monitoring requires regular assessment **of the animal(s)** for general clinical health and welfare. The variables assessed and frequency of assessment will depend on the study but should include assessment of all expected clinical signs resulting from experimental manipulations or phenotypes **(ex. pain assessment for post-operative animals)**.

The specific clinical signs noted in 5.1 and humane endpoints listed in Section 5.3 should be included on the monitoring sheets. For example, if you are assessing respiration 2 times daily, a column or location should be available on your monitoring record to record this information.

To view the UBC ACC Monitoring Policy and

	monitoring templates click here.
Click for Guidance Notes ***5.2.*** *Describe each experimental endpoint for the studies described in this protocol. The explanation should incorporate time and/or condition (such as tumour size or time point following treatment). Death of the animal is not an acceptable endpoint. Experimental endpoints need to be specified for each study or procedure.* *Please also indicate the MAXIMUM AGE of the animals at Experimental Endpoint (e.g. in weeks, months or years).*	Experimental endpoints should always precede humane endpoint. If experimental and humane endpoints are the same or have the potential for occurring at the same time, please provide justification.
Click for Guidance Notes ***5.3.*** *Humane Endpoints. Describe the potential signs of illness or distress that will result in euthanasia. These should be described for each study or procedure described in this protocol.* *Please attach additional information (including Standard Operating Procedures for monitoring) by selecting "Add".* **Title** There are no items to display	Provide the specific humane endpoints which will be used to determine when animal suffering or distress will result in euthanasia. (e.g. if weight loss is listed, specify how much weight loss will result in euthanasia). For more information on humane endpoints select here. As per CCAC: In experiments involving animals, any actual or potential pain, distress, or discomfort should be minimized or alleviated by choosing the earliest endpoint that is compatible with the scientific objectives of the research. Humane endpoints may differ for different types of procedures or studies (e.g.humane endpoints for

	infection models will be different than humane endpoints for post-surgical animals). For protocols including multiple procedures or studies, the humane endpoints for each should be described. The clinical signs and humane endpoints listed in this section should be included on the attached monitoring sheets in Section 5.1.
Click for Guidance Notes * ***5.4.*** *The following types of experiments are generally considered to be of a contentious nature. Please indicate if any of these conditions apply to your study by selecting "Add" and viewing the list. If these do not apply to your study, please select Not Applicable from the list. To delete an item from your selected list, click "**x**".* **Contentious Issues** View Not Applicable	There are a number of procedures which by their nature are considered contentious. The UBC ACC takes particular care when reviewing proposals involving these procedures. For that reason, the justification for carrying out the procedure must be carefully detailed. In addition, the exact procedure must be described together with any factors which may influence the outcome of the procedure at any stage (e.g. the frequency, intensity, and duration of electric shocks and the interval between testing of the equipment providing the shocks).
5.5. *Detail any additional assistance that may be required to ensure that the project will be carried out in a competent and humane manner.*	

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View: 6. Drugs and Chemicals

6. DRUGS/CHEMICALS/HAZARDOUS MATERIALS - ANIMAL CARE COMMITTEE

Click for Guidance Notes ***6.1.*** *ANAESTHETIC/SEDATIVES. Please select "Add" to enter. To delete an item from the list below, select "**x**".* **Name of Drug** **Other** **Dosage** **Volume** **Route** There are no items to display	The anaesthetic regime to be employed should be explained in sufficient detail to permit the independent assessment of its efficacy. Dosages are important since there is considerable variability between species used in research and there may be contraindications to the uses of certain drugs in some species. Supplementary drugs for analgesia, control of infection etc. should be similarly detailed. For anaesthetic SOP, click here
Click for Guidance Notes ***6.2.*** *ANALGESICS and ANTI-INFLAMMATORY AGENTS. Please select "Add" to enter. To delete an item from the list below, select "**x**".* **Name of Drug** **Other** **Dosage** **Volume** **Route** There are no items to display ***6.3.*** *ANTIBIOTICS. Please select "Add"*	Give dosages, frequency, routes of administration, and duration. Name the person(s) who will administer the care for each category. Please see the following links for information on analgesia Ketoprofen SOP Buprenorphine SOP Metacam SOP

*to enter. To delete an item from the list below, select "**x**".* **Name of Drug** **Other** **Dosage** **Volume** **Route** There are no items to display	
Click for Guidance Notes ***6.4.*** *OTHER DRUGS, CHEMICALS, BIOHAZARDOUS MATERIALS AND RADIOISOTOPES. Please select "Add" to enter. To delete an item from the list below, select "**x**".* **Name of Drug** **Other** **Dosage** **Volume** **Route** There are no items to display	Give dosages, routes of administration, and duration. Name the person(s) who will administer the care. If experimental drug is proprietary, provide class of drug.
Click for Guidance Notes ***6.5.*** *What are the expected side effects of the compounds listed in 6.4 when given at the doses indicated? Identify toxicities that have been identified in the species being studied. If side effects in the animal species that you are using are not known then indicate this; however provide toxicity information that is known in other species if available. As a result of toxicities and/or anticipated toxicities will these animals require special care? If so, please indicate who will provide it and make sure this information is*	You do not need to provide this information for anaesthetics/sedatives, analgesics/anti-inflammatory agents, and antibiotics.

captured in the monitoring process. If you are working with chemicals which require a chemical risk assessment, please attach a copy of your risk assessment here. If you are unsure whether you need a chemical risk assessment, please email researchsafety@rms.ubc.ca or consult the Risk Assessment section on the UBC RMS Chemical Safety Resources page. Attach documents here: **Title** There are no items to display	
Click for Guidance Notes * ***6.6.*** *What will be the ultimate fate of the animals? If euthanasia is planned, describe the method that will be used including drug dosage and administration route. If a physical method of euthanasia is required (for e.g., because the use of drugs is likely to jeopardize the results of the study) scientific justification is required. The technique must be demonstrated to a UBC veterinarian and the viewing certificate attached.* x Attach documents here: **Title** There are no items to display	The technique chosen should induce unconsciousness rapidly, with death following soon after. If a physical method of euthanasia is required (for e.g., because the use of drugs is likely to jeopardize the results of the study) scientific justification is required. The technique must be demonstrated to a UBC veterinarian and the viewing certificate attached. As per CCAC guidelines, the use of CO2 alone is a conditionally acceptable method which means justification to the Animal Care Committee is necessary. The use of an inhalant anesthetic prior to CO2 is the approved method. Pre-approved Standard Operating Procedures can be found at https://animalcare.ubc.ca/planning-your-research/sops-guidelines Please see the ACC Policy on Euthanasia at https://animalcare.ubc.ca/animal-care-committee/policies-and-guidelines Please also review the CCAC euthanasia guidelines at http://www.ccac.ca/Documents/Standards/Guidelines/Euthanasia.pdf

Click for Guidance Notes ***6.7.a.*** *Will any hazardous materials (chemicals, biologicals, radio-isotopes, infectious agents, radiation/x-rays) be used in the study in vivo? Note: Hazardous chemicals listed in 6.4 should be listed here. All non-fixed animal tissues also require an RG-1 Biosafety Certificate (e.g. Tissues taken for DNA/RNA/protein extraction, tissues for cryosectioning, etc.) should be listed here.* ***6.7.b.*** *If 'yes', please list the hazardous agents* ***6.7.c.*** *Certificate Number (Biosafety, Radiation):*	If hazardous materials are to be used, the Biosafety/Radiation Committees must approve the facilities for handling the materials. This section is to alert people who may be working with the animals of potential dangers and to ensure that appropriate precautions are being taken to protect both people and animals. Please ensure that all staff including Animal Care Technicians have been made aware of all hazards and safety precautions associated with the use of all chemicals, biohazardous materials, radioisotopes, and pharmaceuticals prior to the work commencing. Please ensure copies of all MSDS's are available to all staff. Please note, all non-fixed animal tissues now require an RG-1 Biosafety Certificate (e.g. Tissues taken for DNA/RNA/protein extraction, tissues for cryosectioning, etc.)

To save information on each view as you are working, especially if you are working on the view for a long period of time, select the "Save" button located at the top OR bottom of the view in the blue bar. Your work on each view will automatically be saved once you hit the "Continue" button.

The University of British Columbia

Date: April 17, 2019 8:57:08 AM Print Close

View: 7. Course Information

7. COURSE INFORMATION - ANIMAL CARE COMMITTEE

* ***7.1.*** *Title of Course (Provide Course Number).* Teaching Protocol	
* ***7.2.*** *Title of Lab Exercise or Teaching Project.* Teaching Protocol	
7.3. *What will the ratio of instructors to students be in this laboratory/project?*	
Click for Guidance Notes ***7.4.*** *For directed studies, please list all faculty involved in the course and the animal application numbers associated with the research studies in which the students may become involved. To delete a person below, select "**x**".* **Last Name** **First Name** **Department** **Application Number(s)** There are no items to display	Studies approved by faculty members for students undertaking direct studies under their supervision, should fall within the scope of research studies for which they have Animal Care Certificates. Please list the faculty supervisor and the appropriate application number here.

The University of British Columbia

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View: 8. Signatures and Final Page

8. SIGNATURES AND FINAL PAGE - ANIMAL CARE COMMITTEE

Help

* *Please confirm that all associates listed on this study have read and agreed to comply with this study.*
Yes

* *If SOPs have been attached or referenced in this application, please confirm that all team members listed in sections 1.3, 1.4, and 1.5 have read the SOPs and they understand, accept and agree to follow the methodological procedures described in those SOPs.*
● **Yes** ○ No

* *Please confirm that all study team members are aware that Post-Approval Monitoring, including laboratory visits/viewings, are an important regulatory requirement that the University of British Columbia must meet. Continued protocol approval and renewal are subject to full cooperation with the PAM process and achieving compliance in a timely manner.*
● **Yes** ○ No

* *Please confirm that the work described in this protocol is conducted solely for grants listed.*
● **Yes** ○ No

You have reached the end of the Animal Care Application.

OPTIONS

1) submit application (PI only) - *click the "Continue" button and "Submit application" on the next page.* ***NOTE: the "Submit application" button is only visible to the PI.***

2) work on this application later - *click the "Continue" button. Your application will be in "Pre Submission" and saved in your inbox.*