

**University Animal Care Committee (UACC)**

**Animal Research Ethics Board (AREB)**

**Animal Use Protocol – RESEARCH Application Form**

**Use this form for use of animals in research, testing or production**.

The University Animal Care Committee’s Animal Research Ethics Board (AREB) must approve the use of animals for research prior to the commencement of any project. This use must comply with the *Canadian Council on Animal Care (CCAC) guidelines, the University of Saskatchewan’s Animal Care and Use Procedures, and the Tri-Council MOU – Schedule 3: Ethical Review of Research Involving Animals*.

* \*Annual review and approval is required for ongoing studies. AREB Submission [deadline dates](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/AREB%20Submission%20Deadlines%20and%20Meeting%20Dates/2023%20AREB%20and%20Subcommittee%20Submission%20Deadlines%20and%20Meeting%20Dates.pdf?csf=1&web=1&e=Cvz1Hc).
* \*\*Every four years, the Principle Investigator (PI) must submit a four-year (4 YR) renewal animal use protocol (AUP) form to the AREB for review.

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| **Animal Care and Research Support (ACRS) Staff Use Only** |
| **AUP#** |  | **CI** | Select | **Submission Date:** | Select date |
| **Revision Number** |  | **Edited by ACRS** [ ]  | **Revision Date:** | Select date |
| **ACRS Edits** |  |
| **AREB and/or UACC VETERINARIAN COMMENTS:** |
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| Section 1 - Principal Investigator Information (PI is primary emergency contact) |
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| **Last Name** |       | **First Name** |       |
| **Department/Research Unit / College** |       |
| **Email** |       | **Office Phone** |       |
| **Laboratory Phone**  |       | **After Hours Phone** |       |

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| **Secondary Emergency Contact** (mandatory; provide Facility Manager’s details if PI is the only animal user) |
| **Last Name** |       | **First Name** |       |
| **Office Phone** |       | **After Hours Phone** |       |

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| **Emergency Instructions:** **Provide any instructions for the UACC Veterinarians and/or animal facility staffs in the event that the primary or secondary emergency contacts are not available. For example, special requirements regarding tissue collection, carcass handling, or treatment instructions.** |
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| Section 2 - General Protocol Information |

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| **AUP Title** |       |
| **Proposed Start Date** | Select date | **Expected End Date** | Select date |
| 1. **Descriptive Summary** (required for reporting to CCAC) - In not more than 40 words and in terms understandable to a non-scientist, provide a brief summary of the procedures done to the animals that the public can understand.
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| Section 3 - Scientific Merit Review and Funding Sources |

1. **Is the proposed animal use associated with approved peer-reviewed funding?**

[ ]   **Yes**

[ ]   **No** – Refer to the [Procedure for Scientific Merit Review Required for Animal Use Protocols (Principal Investigators)](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Scientific%20Merit%20Review/OVPR_SciMeritProcedure%28PrincipalInvestigators%29_01Sept2022.pdf?csf=1&web=1&e=47kuS1) for instructions pertaining to the scientific merit review process. Note: The AREB will not issue a Certificate of Approval for an AUP until scientific merit is satisfied.

If this AUP requires scientific merit review by the OVPR Scientific Merit Review Committee for Animal-Based Research (SMRCABR), append the [Scientific Merit Review Form for Principal Investigators](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Scientific%20Merit%20Review/OVPR%20SMRCABR%20ReviewFormPI%202022.docx?d=w6cac968c781342be87971f63e78d6986&csf=1&web=1&e=0W7ZWh) (which includes hypothesis, objectives, research design and methodology, statistics, and significance and potential contributions). The SMRCABR will review the SMR Form and the AUP. The review process typically takes 2-3 weeks.

[ ]  **Pending peer review by source/agency.** Provide source/agency conducting the peer review.

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1. **List the source(s) of funding for this AUP:**

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| **Source/Agency** | **Funding status** | **Term** **(Start - End dates)** | **New or** **Existing Fund** | **UniFi Fund**  |
|       | Select |       | Select |       |
|       | Select |       | Select |       |

Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

**Note: For industry-supported research**, refer to the [OVPR REI Animal Ethics Review Fee Procedures](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/AREB%20Processes/UACC_Procedures%20REI_AnimalEthicsReviewFee_02Jul2020.pdf?csf=1&web=1&e=EYhXjK). Confirmation that the contract associated with this research includes the appropriate ethics review fee is required before the AREB will issue a Certificate of Approval for this AUP.

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| Section 4 - Personnel Involved in the Protocol |

1. **Complete the table below for the Principal Investigator and each person directly involved with live animal use.**

| **Last Name** | **First Name** | **Position** | **NSID** | **Email** |
| --- | --- | --- | --- | --- |
|       |       | Select |       |       |
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Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

\*\* **AUD-PI -** Grant/contract holders who are not involved with any direct hands-on work with animals. The AUD-PI must be listed on the AUP because they are ultimately responsible for the project Fund(s) that supports the animal research.

**Note - Animal users must be listed as authorized workers on the biosafety permit(s) associated with this AUP (if applicable). Ensure all individuals who need to be added to a biosafety permit have current biosafety training.**

1. **For each animal user listed above, provide the following information in the table below.** This information is not required for animal care staff (i.e. technicians) employed at the LFCE, Dairy Unit, ACS, LRB, Poultry Centre, PSCI, VIDO, WCVM ACU, or VMC, with the exception of husbandry/facility AUPs.

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| **Last Name** | **Description of relevant training and experience** | **Responsible for which AUP procedures**  |
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Note: To add more rows: Right click in Table > Insert > Row Below.

1. **Will USask animal facility staff provide technical services beyond normal husbandry?**

[ ]  **No**

[ ]  **Yes** - List the services provided by USask animal facility staff (ex. blood collection, gavage, etc.)

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1. **Are any personnel unfamiliar or untrained in any procedures described in this AUP?**

[ ]  **No**

[ ]  **Yes** - Describe the training that is required. Contact the UACC Clinical Veterinarian to coordinate.

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| Section 5 - Purpose of Animal Use and Category of Invasiveness |

1. **What is the appropriate** [**CCAC Purpose of Animal Use**](https://www.ccac.ca/Documents/Assessment/Reporting-AUDF.pdf) **(PAU) for this AUP?**

[ ]  **0**  [ ]  **1**  [ ]  **2** [ ]  **3**  [ ]  **4**

1. **What are the relevant purposes for this AUP? Check all that apply:**

[ ]  **Research** - if checked, then check a box below:

[ ]  Pilot study

[ ]  Basic or applied

[ ]  Field or wildlife study

[ ]  Diagnostic

[ ]  Other, specify:

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[ ]  **Testing**

[ ]  **Production** (breeding/herd/colony maintenance)

1. **Choose the appropriate CCAC Category of Invasiveness (CI) for this research:**

[Animal Experiments](https://www.ccac.ca/Documents/Standards/Policies/Categories_of_invasiveness.pdf)

[ ]  Level B [ ]  Level C [ ]  Level D [ ]  Level E

[Wildlife Studies](https://www.ccac.ca/Documents/Standards/Guidelines/Wildlife.pdf) – Complete [Appendix-B Wildlife Studies](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/Appendices/UACC_Appendix%20B%20-%20Wildlife%20Form%202023.docx?d=w849d484ce076469eb65910136f9fc619&csf=1&web=1&e=3qg4VC)

[ ]  Level B [ ]  Level C [ ]  Level D [ ]  Level E

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| Section 6 - NC3Rs ARRIVE Guidelines |

* The [National Centre for the Replacement, Refinement & Reduction of Animals in Research (NC3Rs) Animal Research: Reporting of *In Vivo* Experiments (ARRIVE) Guidelines](https://arriveguidelines.org/) is endorsed by a growing list of journals, funders, and academic institutions.
* Refer to [The ARRIVE guidelines 2.0](https://arriveguidelines.org/sites/arrive/files/documents/ARRIVE%20guidelines%202.0%20-%20English.pdf) as an aid to your project planning and experimental design considerations. AREB review of your AUP will consider these items and recommendations as appropriate.

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| Section 7 - Lay Summary |

The purpose of the lay summary is to ensure all members of the AREB understand the purpose of the research and the need to use animals, including due consideration of the [Three Rs](https://www.ccac.ca/Documents/Education/Modules/Core_Stream/CCAC_training_module_on_Three_Rs_of_humane_animal_experimentation.pdf).

Provide 1-3 sentences (or more) for each response written in language easily understood by the non-scientific community. Define abbreviations and acronyms and refrain from using scientific jargon.

1. **What are the aims and benefits of the project? How will the proposed AUP contribute to these benefits?**

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1. **What species (common name) or strain will be used? How does its use address the scientific objectives?**

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1. **What procedures or interventions will the animals experience during the course of the project?**

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1. **Will the animals experience distress, pain or suffering over the course of the project? How is this mitigated?**

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1. **What and when (time frame) are the planned endpoints of the project?** (E.g., 30-day feeding trial, tissue collection 10 days after surgery, terminal endpoints, etc.; humane endpoints to be provided in Section 13).

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| Section 8 - Source and Description of Animals |

1. **Complete the table below to provide information for each species and strain requested.**
* For multi-year studies, indicate the numbers requested for year 1 and outline the anticipated animal use for the total project; justify these numbers in Section 10.2a.
* Note: The AREB only approves animals listed in Year 1. For subsequent years, you must provide justification of animals requested on the annual review (ANR) or 4 YR AUP form(s).
* If you intend to use live animals from the UACC Animal and Tissue Share Program, include those animals in the table below.
* **State the potential baseline mortality rate for each species/strains listed in the table below. Refer to** [**UACC Procedures for CCAC Reportable Animal Welfare Incident (RAWI) Reporting**](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Compliance%20and%20Post-Approval%20Review/UACC_Procedures%20RAWI%2030Nov2022.pdf?csf=1&web=1&e=iU2YMt)**.**
	+ Baseline mortality includes animals expected to be euthanized as per the HIP checklist and/or mortalities experienced due to toxicology, infectious disease, or standard production/breeding of animals.
	+ For RAWI Reporting, mortalities must have occurred over a defined period of time; the CCAC defines this as a consecutive 7-day period.
	+ Consult with a UACC Veterinarian for assistance to determine the appropriate baseline mortality specific to your animal use.

**Important – All unexpected mortality, morbidity, or other incidents must be reported to the** **UACC Veterinarians** **using an** [**MMI Report**](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/MMI%20Report%20Forms/UACC_MMI%20Report%202023.docx?d=w9deb8c176f9d42499c75d8775864c100&csf=1&web=1&e=5LbtP4) **or** [**MMI Fish and Wildlife Report**](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/MMI%20Report%20Forms/UACC_MMI%20Report%202023%20-%20Fish%20and%20Wildlife.docx?d=wed9babf44cde44e88dd220c72ace81b0&csf=1&web=1&e=vqc65b)**.**

| **Animal** **common name and age** | **Sex** | **Potential Baseline Mortality Rate (%)** | **Strain / Stock** | **Supplier / Source** | **Number of Animals**  |
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|       | M/F |       |       | Select |       |

Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

**Note:** **To purchase animals or to report animal use submit an** [**Animal Use Request and Report Form**](https://research.usask.ca/rei/researchers/ethics/uacc-animal-order-desk.php) **to the** **UACC Animal Order Desk** **(AOD).** Refer to [UACC SOP A102 (Animal Acquisition and Reporting)](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20SOPs/Institutional%20SOPs/A102%28AnimalAcquisitionReporting%29_11June2021.pdf?csf=1&web=1&e=4nXc8J) which describes the general guidelines and responsibilities involved in the acquisition of animals and reporting of animal use in the UACC Animal Care and Use Program. Note: In most cases animal reports or orders must be placed prior to animals arriving into a facility. For use of client-owned animals or field/wildlife studies, animals must be reported to the AOD shortly after they are used or caught. Consult directly with the AOD if you have any questions.

1. **Provide justification for any animal (from the table above) where the potential baseline mortality rate is greater than 0%. Consult with a** **UACC Veterinarian** **for assistance to determine the appropriate baseline mortality specific to your animal use.**

[ ]  **Not Applicable**

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1. **For Supplier / Source: Donated, Commercial, Wildlife, or Other provide additional information below.**

[ ]  **Not Applicable**

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1. **For Supplier / Source: Transfer from another AUP – List the AUP number(s) from where the animals were transferred. If there is re-use of any animals, clarify what procedures the animals experienced under the previous AUP. Indicate what rest period they will receive before use under this AUP.**

**☐ Not Applicable**

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1. **For Supplier / Source: Client-owned animals explain the recruitment process and complete an** [**AREB Owner Consent form**](https://usaskca1.sharepoint.com/%3Af%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/AREB%20Owner%20Consent%20Templates?csf=1&web=1&e=KNTVwI)**. Attach owner consent form with AUP submission.**

[ ]  **Not Applicable**

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1. **For Supplier / Source: Other Institutions provide details below and complete the USask form to** [**Appendix C - Request to Obtain Animals from other Institutions**](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/Appendices/UACC_Appendix%20C%20-%20Request%20to%20Obtain%20Animals%20from%20Other%20Institutions%202023.docx?d=w1cb6cfbbd9144e57b9ea16b9302b1830&csf=1&web=1&e=ZVKjbm)**.**

[ ]  **Not Applicable**

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1. **(a). Will animals be bred specifically for this project?**

[ ]  **No – Go to Section 9.**

[ ]  **Yes** – Use sound, scientific justification to explain the need for the breeding colony. Provide details regarding the breeding scheme and the number of animals required as experimental animals. Indicate the disposition of unwanted or unused animals. Account for the original breeding animals obtained and the total number of animals generated from the colony and used as experimental animals in the table above. For breeding of rodents, refer to the [UACC Procedures on In-House Rodent Breeding Colonies](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Animal%20Procedures%20and%20Use/UACC_Procedures%20In-HouseRodentBreedingColonies_11Jun2021.pdf?csf=1&web=1&e=DlYzWf).

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1. **(b). Are the species/strains commercially available?**

[ ]  **No**

[ ]  **Yes** - Provide clear justification why breeding of a commercially available strain is required:

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| Section 9 - Housing of Animals and Location of Procedures |

1. **Identify the facility or location where the animals will be housed and where will procedures be conducted?**

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| **Animal Housing** | **Animal Procedures** | **Containment Level** |
| Select | Select | Select |
| Select | Select | Select |

Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

1. **If other, describe:**

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1. **Do you have any special housing or husbandry requirements beyond standard facility practices?**

[ ]   **No**

[ ]  **Yes** - List below

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1. **Are animals transported to USask by non-commercial sources? (E.g. Charles River is a commercial supplier).**

[ ]  **No**

[ ]  **Yes** - Provide details regarding the transport. Refer to the [UACC Procedures for Experimental Animal Transport](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Animal%20Procedures%20and%20Use/UACC_Procedures-ExperimentalAnimalTransport_11June2021.pdf?csf=1&web=1&e=GhuygK).

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1. **Are animals transported from one USask facility/location to another facility/location?**

[ ]  **No**

[ ]  **Yes** - Provide details regarding the transport. Refer to the [UACC Procedures for Experimental Animal Transport](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Animal%20Procedures%20and%20Use/UACC_Procedures-ExperimentalAnimalTransport_11June2021.pdf?csf=1&web=1&e=GhuygK).

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| Section 10 - Description of Project, Experimental Design and Procedures |

1. **Rationale and Hypothesis(es):**

In 1-2 paragraphs, briefly and clearly describe the rationale for this project, its primary objectives, any hypotheses to be tested, and benefit to humans or animals. Do not cut/paste information from a grant application.

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1. **Experimental Animal Use:**

The following questions ask for a clear description of the experimental animal use, justification of sample size, animal acclimatization and environmental enrichment.

1. **Experimental Design and Procedures**

Clearly outline the study design and experimental procedures, including the following:

* the experimental animal (species/strain/sex/age as well as stock#/genotype if applicable),
* treatment and control groups, group size (example: 5 animals x 3 treatments x 2 replicates = 30 animals), the experimental unit (e.g. an individual animal, the cage/pen),
* steps taken to minimize subjective bias (e.g. randomization, blinded experiment),
* procedures you propose to conduct on the animals, and a description of what happens to the animals during the experiments, and/or
* consider attaching a flow chart with timelines to detail animal use for procedures or surgeries performed on the same animal(s).

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1. **Justify any food or water deprivation (duration, reason) if the interval is >12hrs, and/or if single housing of social animals.**

[ ]  **Not applicable**

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1. **Power/Sample Size Assessment need input**

Indicate the statistical analysis used to determine the animal numbers in the described procedures. If none, justify why none is required. (Note: animal numbers must be sufficient to ensure statistical significance and acknowledge expected attrition rates). Reference to published papers is not sufficient.

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1. **Animal Acclimation and Preparation for Research Use**

One-week acclimation after arrival at any USask animal facility is required. State acclimation period and steps taken to prepare animals for research (e.g., habituation to handing and/or restraint, training on equipment/tests). Justify any acclimation period shorter than seven days.

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1. **Environmental Enrichment**

Justify any withholding of environmental enrichment. Describe any additional environmental enrichment (beyond standard enrichment) provided to enhance animal well-being.

 [ ]  **Not applicable**

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1. **Will any live animals use take place at the Canadian Light Source (CLS)?**

[ ]  **No**

[ ]  **Yes - Describe in detail procedures conducted at CLS.**

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1. **Standard Operating Procedures: Refer to** [**UACC SOPs**](https://usaskca1.sharepoint.com/sites/USaskUniversityAnimalCareCommittee/UACC%20SOPs/Forms/AllItems.aspx) **on SharePoint Online site:** [**USask University Animal Care Committee**](https://usaskca1.sharepoint.com/sites/USaskUniversityAnimalCareCommittee/UACC%20SOPs/Forms/AllItems.aspx?viewid=f948b81d%2Dac7f%2D49e9%2D82ca%2D549ca86a8f79) **(available to all USask animal users).**

Provide SOPs for all manipulations and techniques performed on the animals, including surgery, testing, substance administration, sample collection, etc. If an institutional UACC approved SOP is available, list the number below, e.g. SOP C201 Blood Collection or SOP X101 Administration of Substances. Do not append UACC approved SOPs. **For all other SOPs, attach a copy with this application**. **NOTE: As a reminder, SOPs and HIPs must be reviewed and updated every 3 years.**

1. [**Institutional UACC approved SOP**](https://usaskca1.sharepoint.com/%3Af%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20SOPs/Institutional%20SOPs?csf=1&web=1&e=KgyaJC) **numbers:**

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1. **Are you willing to share any new SOPs associated with this AUP in the UACC SOP databank?**

[ ]  **No**

[ ]  **Yes** – Available to active USask animal users

1. **Administration of Substances:**

In the table below, provide details for any substance administered for each species and procedure such as:

* Chemicals, cells, bacteria, rDNA/genetically modified microorganisms, modified live vaccines, viruses, etc. and its associated administration vehicle as appropriate (e.g. saline, media)
* Sedatives, anesthetics or analgesics, and euthanasia agent for all non-surgical and surgical procedures. For surgeries, include premedication(s), anesthetic, peri- and post-operative analgesics, as appropriate.

 [ ]  **Not Applicable**

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| **Recipient Animal** **(common name)** | **Purpose (e.g.,** **pre-emptive analgesic)** | **Substance** **and vehicle** | **Dose** **(e.g., mg/kg)** | **Administration volume** **(e.g., ml)** | **Route and Site (e.g., IV, tail)** | **Frequency** **and Duration** |
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Note: To add more rows: Right click in Table > Insert > Row Below.

[ ]  **As Principal Investigator, I accept responsibility to ensure all research team members are trained in the safe**

 **handling of these substances.**

**\* Consult with a** **UACC Veterinarian** **if you have any questions about drug administration or dosages.**

1. **Are any of the listed administered substances a** [**controlled substance**](https://laws-lois.justice.gc.ca/eng/acts/C-38.8/)**?**

[ ]  **No** [ ]  **Yes** - Read reminder below:

* Controlled drug regulations require PIs to obtain exemptions from Health Canada for controlled substances for research use ([Application Form For An Exemption To Use A Controlled Substance For Scientific Purposes](https://www.canada.ca/en/health-canada/services/health-concerns/controlled-substances-precursor-chemicals/exemptions/application-form-exemption-use-controlled-substance-scientific-purposes.html)). This process typically takes 1-2 months.
* As per Health Canada Regulations, PIs must safely store the controlled substance and maintain a record of use.
* The exemption must be renewed yearly and the volumes/amounts used reported to Health Canada.
* **If you are a veterinarian,** you do not need to apply for an exemption to use controlled veterinary substances for research use if you meet certain conditions outlined in the Declaration Form. If controlled substances are the subject of your research, a section 56 exemption is required regardless of the PI being a veterinarian.
1. **Will you perform anesthesia or surgery?**

[ ]  **No – Go to Question 10.7.**

[ ]  **Yes** **- Answer below (a-c).**

1. **Provide scientific justification for withholding anesthesia or analgesia if any procedure usually requires anesthesia or analgesia.**

[ ]  **Not applicable**

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1. **List each procedure involving anesthesia or surgery. Attach an SOP and anesthesia-monitoring record.**

[ ]  **Not applicable**

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1. **Where will the surgery or anaesthesia be performed? List the building and room number.**

 [ ]  **Not applicable**

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1. **Collection of Samples**

[ ]  **Not Applicable**

**List all samples collected from live animals (e.g., blood, fluids, tissues, etc.). Do not include samples collected during terminal procedures.**

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| --- | --- | --- | --- | --- |
| **Animal****(common name)** | **Sample** | **Site** | **Amount/Volume** | **Frequency & Duration** |
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|       |       |       |       |       |

Note: To add more rows: Right click in Table > Insert > Row Below.

1. **Does this AUP involve field studies using wild animals?**

[ ]  **No**

[ ]  **Yes – Complete UACC** [**Appendix-B Wildlife Studies**](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/Appendices/UACC_Appendix%20B%20-%20Wildlife%20Form%202023.docx?d=w849d484ce076469eb65910136f9fc619&csf=1&web=1&e=y6qnOL)

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| Section 11 - The Three Rs Principles |

The CCAC requires that Principal Investigators provide information on the effective implementation of the Three Rs of animal use: Replacement, Reduction and Refinement. Refer to the [CCAC Three Rs webpage](https://ccac.ca/en/three-rs-and-ethics/) for more information.

**Note**: In cases of freedom of information requests, organizations such as animal rights groups may specifically ask for information pertaining to the 3Rs. Therefore, researchers must accurately answer these questions about replacement, reduction, and refinement of animals used for research.

1. **Replacement:** use of an inanimate system as an alternative (e.g., a computer model or program); replacement of sentient animals (e.g., vertebrates) with less sentient animals (e.g., invertebrates, such as worms, bacteria, etc.); cell or tissue cultures. **Review the** [**CCAC Three Rs Search Guide**](https://ccac.ca/Documents/National_Workshops/2012/Three_Rs_Search_Guide.pdf) **and a search engine for alternatives.**
2. **Did the search identify replacement alternatives that could meet the objectives of the study?**

[ ]  **No**

[ ]  **Yes**

1. **Provide a brief explanation of your search and the results. If the search identified replacement alternatives, explain why they were not chosen.**

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1. **Reduction:** a decrease in the number of animals used previously with no loss of useful information achieved by reducing the number of variables through data sharing, good experimental design (e.g. repeated measures), by using genetically homogeneous animals or by ensuring that the conditions of the experiment are rigorously controlled.

**Briefly describe the considerations made to minimize the number of animals used.**

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1. **Refinement:** a change in some aspect of the experiment that results in a reduction or replacement of animals or in a reduction of any pain, stress or distress that animals may experience. The establishment of early endpoints for intervention in a study that has the potential to cause pain or distress is an example of refinement.
2. **Describe any refinement(s) made to procedures and describe any “lessons learned” that will improve animal welfare in this new AUP submission.**

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1. **If appropriate, briefly describe whether the experimental outcomes from this AUP will have implications for the replacement, refinement or reduction of animal use in research.**

[ ]  **Not applicable**

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| Section 12 - Monitoring |

Various *CCAC Guidelines* and *CALAM Standards of Animal Care* require daily observation of animals. In some cases, observation that is more frequent is necessary during critical periods with respect to impairment. Increased frequency of observations depends on the potential for increasing pain and/or distress. All animals that undergo surgery require documentation of surgical/anesthetic and postoperative monitoring.

1. **Animal Monitoring**
2. **What is the monitoring plan *during* the intervention?**

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1. **What is the monitoring plan *after* the intervention?**

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1. **Documentation of animal monitoring:**
2. **Is there a monitoring schedule for any procedure in this AUP?**

[ ]  **No**

[ ]  **Yes** – Attach a copy of the monitoring schedule with submission of this AUP.

1. **Who is responsible for daily monitoring and record keeping?**

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1. **What is the chain of command for reporting monitoring results when animals are reaching the endpoint (including authority to euthanize)? Provide authorization within the Humane Intervention Point (HIP) checklist.**

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| Section 13 - Humane Intervention Point (HIP) Checklist (Endpoints) |

When experimental procedures produce ongoing pain/distress a Humane Intervention Point (HIP) checklist is required to ensure that an animal's discomfort, pain and/or distress is terminated, minimized or reduced. Refer to the [CCAC Guidelines on: CCAC guidelines: Identification of scientific endpoints, humane intervention points, and cumulative endpoints](https://ccac.ca/Documents/Standards/Guidelines/CCAC_guidelines_scientific_endpoints.pdf)

1. **What criteria will trigger the decision to remove an animal from the experiment or to terminate the experiment? (I.e., behavioural changes, physiological signs, and signs of toxicity, if applicable).**

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1. **Is there a Humane Intervention Point (HIP) checklist?** [HIP templates](https://usaskca1.sharepoint.com/sites/USaskUniversityAnimalCareCommittee/HIP%20Checklists/Forms/AllItems.aspx) for different species are available in the [USask University Animal Care Committee](https://usaskca1.sharepoint.com/sites/USaskUniversityAnimalCareCommittee/HIP%20Checklists/Forms/AllItems.aspx?viewid=3bf14437%2Df3c4%2D471b%2D903c%2Ddc13e0d38a84) SharePoint Online site (available to all USask animal users).

[ ]  **Not Applicable**

[ ]  **Yes** – Attach the HIP checklist that uses the criteria identified above and clearly describes the point at which animals will be euthanized due to pain and/or distress or discomfort, or given treatment to relieve pain and/or distress or discomfort regardless of study endpoints or completion of the study.

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| Section 14 – Fate of Animals |

1. **Check the appropriated box and provide further details (as required) as to the fate of the animals at the end of the study.**

[ ]  Kept as USask stock/colony animals

[ ]  Returned to owner

[ ]  Sold - answer (a) below

[ ]  Adopted - answer (a) below

[ ]  Donated to Tissue Share / Transfer to another AUP - answer (a) below and specify AUP number if appropriate

[ ]  Euthanized - answer (b) & (c) below

[ ]  For wildlife studies animals released to the wild. Note: Refer to the [UACC Procedures UACC Guidance for Fish and Wildlife](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Compliance%20and%20Post-Approval%20Review/UACC_Procedures%20for%20Fish%20Wildlife%20Reporting%2025Nov2021.pdf?csf=1&web=1&e=bCKfdO) for all necessary reporting.

[ ]  Other - describe below:

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1. **If the animals are sold, adopted, donated or transferred, indicate to whom (if applicable, note CFIA regulations regarding withdrawal times for animal slaughter):**

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1. **Identify who will perform euthanasia:**

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1. **Indicate method of euthanasia:**

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| --- |
| [ ]  Carbon dioxide (under anesthesia)[ ]  Cervical dislocation (under anesthesia) |
| [ ]  Decapitation (under anesthesia) |
| [ ]  Anesthesia and exsanguination |
| [ ]  Captive bolt |
| **If one of the following are chosen provide additional information below:** |
| [ ]  Anesthetic overdose - Specify the secondary method to confirm death. |
| [ ]  Carbon dioxide - Provide scientific justification for use of carbon dioxide as a primary method. Also, confirm the second method of euthanasia (e.g. exsanguination, cervical dislocation, decapitation or opening the chest) used to confirm death. |
| [ ]  Decapitation without anesthesia - Provide justification if done on conscious animals. |
| [ ]  Cervical dislocation without anesthesia - Provide justification for use without anesthesia and confirm the second method of euthanasia (e.g., exsanguination, decapitation or opening the chest) used to confirm death. |
| [ ]  Other - describe below. |

**Additional information required - describe here:**

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| Section 15 - Emergency Veterinary Care |

1. **Dealing with unexpected complications**
2. **What provisions will be made to deal with any unexpected problems or with animals showing severe pain or distress?**

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**Reminder:**Submit a [MMI Report Form](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/MMI%20Report%20Forms/UACC_MMI%20Report%202023.docx?d=w9deb8c176f9d42499c75d8775864c100&csf=1&web=1&e=24dg40) for any incidents that occur under this AUP as per the [UACC Procedures on Submission of a Morbidity Mortality Animal Welfare Incident Report Form](https://research.usask.ca/rei/documents/researchers/animal-care-and-research-support/policies-and-procedures/uacc_procedures-mmireporting_19nov2012.pdf). **For field studies using fish or wildlife** - Submit a [MMI Fish and Wildlife Report](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/MMI%20Report%20Forms/UACC_MMI%20Report%202023%20-%20Fish%20and%20Wildlife.docx?d=wed9babf44cde44e88dd220c72ace81b0&csf=1&web=1&e=0tUW4D) as per the [UACC Procedures for Fish and Wildlife](https://usaskca1.sharepoint.com/%3Ab%3A/r/sites/USaskUniversityAnimalCareCommittee/UACC%20Procedures/Compliance%20and%20Post-Approval%20Review/UACC_Procedures%20for%20Fish%20Wildlife%20Reporting%2025Nov2021.pdf?csf=1&web=1&e=YXfJ0w) Reporting. [All UACC forms can be found on [ACRS Website](https://research.usask.ca/rei/researchers/ethics/animal-ethics-forms.php) and SharePoint Online site: [USask University Animal Care Committee](https://usaskca1.sharepoint.com/sites/USaskUniversityAnimalCareCommittee).]

1. **Confirm the facility veterinarian who is responsible to provide oversight for this AUP.** Note - If you are the principal investigator and the designated UACC Facility Veterinarian, then select the UACC Clinical Veterinarian.

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| **Facility Veterinarian**  |

1. **If Other, describe below (Note - 'Other' is chosen only when work is conducted at a facility not affiliated with the USask):**

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* Contact UACC Clinical Veterinarian if you require veterinary assistance for your animals.
* Note that the UACC Clinical Veterinarian, University Veterinarian or designate is obligated to treat or euthanize animals in distress.
* After a reasonable attempt, if the Primary Investigator cannot be contacted, the decision of the Facility Veterinarian is final. Ensure arrangements are in place to permit consultation on a 24-hour a day, 7-day a week basis.

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| Section 16 - Use of Prairie Diagnostic Services Inc. (PDS) |

1. **Identify any services required by** [**Prairie Diagnostic Services**](https://pdsinc.ca/services/forms) **(PDS is full-service veterinary diagnostic laboratory for testing and disposal needs; for more information see** [**Use of PDS**](https://research.usask.ca/rei/documents/researchers/animal-care-and-research-support/uacc_use-of-prairie-diagnostic-services-inc.-pds.pdf)**):**

[ ]  Not applicable

[ ]  Diagnostic testing services

[ ]  Necropsy facility use

[ ]  Animal disposal services

|  |
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| Section 17 - Occupational Health and Safety (Biosafety, Chemical, Radiation) |

According to CCAC Guidelines on AUP review, use of hazardous materials in living animals must be clearly identified, and institutional approval of this use provided.

**IMPORTANT - BIOSAFETY, RADIATION SAFETY, CHEMICAL SAFETY, and CANNABIS SAFETY REQUIREMENTS, as appropriate to this AUP, must be in place before approval can be granted by the AREB.**

1. **Check all biological and hazardous materials:**

|  |  |
| --- | --- |
| [ ]  Bacteria | [ ]  Human cell lines |
| [ ]  Viruses | [ ]  Animal cell lines |
| [ ]  Fungi | [ ]  Animal tissues (including blood, serum, etc.) |
| [ ]  Parasites | [ ]  Live animals |
| [ ]  Toxins | [ ]  Animal tissues of unknown health status |
| [ ]  Recombinant RNA/DNA or genetically modified microorganisms (GMMO)[ ]  Chemical[ ]  Carcinogens[ ]  Nanomaterials/nanoparticles[ ]  Other | [ ]  Transgenic animals[ ]  Radionuclides[ ]  Cannabis[ ]  Controlled Substances listed under the [Controlled Drugs and Substances Act](https://laws-lois.justice.gc.ca/eng/acts/c-38.8/FullText.html)[ ]  Cytotoxic drugs |

1. **In the table below, list all biological materials used in the study; include genus, species, and strain (if applicable) (e.g., *Escherichia coli* strain 0157:H7, Influenza A virus H1N1 strain A/Halifax/210/09, Human Cell line DU-145, blood obtained from healthy animals, etc.).**

[ ]  **Not Applicable**

|  |  |  |
| --- | --- | --- |
| **Biological Material** | **Risk Group (if known)** | **Description and Use of Biological Material** |
|       | Select |       |
|       | Select |       |

Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

1. **For all Risk Group 2 and 3 materials listed, complete** [***Appendix A – Hazardous Materials Form***](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/Appendices/UACC_Appendix%20A%20-%20Hazardous%20Material%20Form%202023.docx?d=w72ba099255874256a843f96d318f7a0d&csf=1&web=1&e=4tMAqi)***.***

[ ]  **Not Applicable**

1. **If the proposed animal research involves recombinant DNA/RNA, GMMOs, or transgenic animals complete a** [Risk Assessment for rDNA/Genetically Modified Microoganisms (GMMOs) Form](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/srdl/_layouts/15/Doc.aspx?sourcedoc=%7B3B14BC36-4229-4127-B092-06C5388C7755%7D&file=Biosafety%20-%20Form%20-%20Risk%20Assessment%20for%20rDNA-GMMO-Transgenics%20Form.docx&action=default&mobileredirect=true&cid=8d04728b-53b8-4c78-8a0d-65b7067f6d10) **and submit to** **biosafety@usask.ca****.**

[ ]  **Not Applicable**

1. **Provide a description of all other hazardous materials used in the study, and complete** [***Appendix A – Hazardous Materials Form***](https://usaskca1.sharepoint.com/%3Aw%3A/r/sites/USaskUniversityAnimalCareCommittee/Animal%20Use%20Protocol%20AUP%20Forms/Appendices/UACC_Appendix%20A%20-%20Hazardous%20Material%20Form%202023.docx?d=w72ba099255874256a843f96d318f7a0d&csf=1&web=1&e=4tMAqi) **for each hazardous material.**

[ ]  **Not Applicable**

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1. **List all Biosafety Permit(s), Radiation Safety Permit(s), and/or Cannabis Safety Permit(s) that cover this AUP. Include permits for co-PIs and/or co-investigators that are involved in the study. If you have questions, contact** **biosafety@usask.ca.**

[ ]  **Not Applicable**

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 **Note: Work with Risk Group 1 materials does not require a Biosafety Permit; however, if the PI already holds a Biosafety Permit, it must be listed above***.*

1. **In the table below, list the locations where Risk Group 2 biological materials will be handled and/or stored.**

[ ]  **Not Applicable**

|  |  |  |  |
| --- | --- | --- | --- |
| **Building**  | **Floor #** | **Room #** | **Work Performed: InVivo/InVitro** |
|       |       |       | Select |
|       |       |       | Select |

Note: To add more rows: Right click in Table > Insert > Row Below. Drop down boxes do not copy with addition of rows. For drop down menu options, copy and paste the ‘Select’ box from the row above or type in appropriate answer.

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| Section 18 - Declaration and Submission of AUP |

**The Principal Investigator's acknowledgement below indicates that:**

1. All animals used in this research project/course will be cared for and used in accordance with the Guidelines of the Canadian Council on Animal Care, and the Regulations of the University Animal Care Committee.
2. The UACC Veterinarian has the authority on behalf of the UACC to order treatment or euthanasia for any animal (excepting private/client-owned animals) in emergencies, if in the veterinarian's professional judgment such action is urgently required. You acknowledge that it is your responsibility to inform the veterinarian of contraindicated treatments or medications.
3. You have searched the literature and the proposed animal use does not unnecessarily duplicate other animal use.
4. You have considered alternative procedures that do not involve the use of living animals and that an alternative to the proposed animal use is not feasible.
5. All manipulations which have the potential to cause pain and discomfort, wherever possible, have been refined in technique and reduced in numbers to achieve the desired results with a minimum degree of discomfort to the animal.
6. Experienced, trained and competent personnel using recognized techniques will carry out all animal manipulations. You accept personal responsibility as principal investigator for all animal manipulations in this project.
7. You will provide all personnel involved in the project with the most current version of the approved AUP.
8. You accept responsibility for keeping the AUP information current, especially with respect to methodology.
9. You will notify the AREB of any revisions to this AUP and submit an AUP modification request.
10. You will keep copies of all approved AUPs, AUP summaries, revisions and amendments in an accessible file.

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| --- | --- | --- |
| **Principal Investigator** | **Acknowledgement** | **Date** |
| First and Last name | [ ]  I have read and approve submission of this AUP. | Select Date |

Send completed AUP electronically by e-mail to uacc.office@usask.ca.

**IMPORTANT!** If you do not receive a reply from the Animal Care and Research Support team within seven (7) business days following submission of this form, call 306-966-4126 or email uacc.office@usask.ca.