Finding, Copying and Creating Procedures in RAP

Log into the Research Administration Portal (RAP) with your username and password.

Click on the IACUC tab at the top of the screen, and select your Research Team.

Finding Standard Procedures
Standard procedures are pre-approved by the IACUC. Please use the standard procedures if they are available and appropriate for your research.

On your Team page, select the Procedures tab.
To see if there is a standard available, type “%” in the Filter search box as a wildcard (e.g. %euth to find all of the standards with euthanasia in the name), then click “go”.

You can also filter search by selecting procedure type, species, etc. from the drop-down box.

Once you find what you are looking for, Click on the name in red letters. Remember, if it is Red it is clickable.
On the Procedure page, select printer version to review the details.

In print view, you can scroll through and review the entire procedure.

Euthanasia

1. Method of euthanasia: Chemical

2. Describe procedure:
   Barbitalne Overdose: The animal will be injected with greater than 150 mg/kg of a barbiturate based euthanasia solution or sodium pentobarbital solution.

   CO₂ Inhalation: Carbon dioxide must come from compressed gas with a flow rate which will displace 10% to 30% of the chamber volume per minute (flow meter required). The maximum number of animals permitted in a cage for euthanasia will not exceed twice the number allowed to be housed in a particular cage. The chamber will not be pre-charged. CO₂ flow will be maintained for at least 1 minute after respiratory arrest.

   Inhalation Anesthetic Overdose: The animal will be placed in a closed receptacle containing cotton or gauze soaked with an appropriate amount of liquid anesthetic listed in the protocol. The animal will not be allowed to come in direct contact with the anesthetic liquid. Alternatively, anesthetic vapor will be introduced using a precision vaporizer set at its maximum output. Exposure will continue for at least an additional 3 minutes after respiratory arrest.

   Injectable Anesthetic Overdose: The animal will be administered at least 3 times (if using a higher dose) to 5 times (if using a lower dose) the anesthetic injectable dose listed in the protocol.

3. Describe how death will be confirmed:
   One of the secondary physical methods listed below will be performed:

   Cervical dislocation
   Bilateral thoracotomy
   Decapitation
   Removal of vital organ

4. Select the substance administration used (include anesthesia and analgesia):

Substance Administration - Euthanasia - Mouse

Alternatively, if you cannot find the procedures in the list above, enter the information here:

Describe each substance and the step-by-step procedure to be used:
(include route, dose, volume, concentration, and whether substance is pharmaceutical grade)
If the standard procedure meets your needs, then do nothing. The standard will be available in the library for you to select when you need to add it to the experiment.

If you would like to make changes, you will have to copy the procedure. Close out of printer view.

**Copy a procedure**

Procedures can be copied from the standard library, from another research team you are on, or within your own team.

There are two ways to copy a procedure

1. From the procedure tab on your team page use the **Action** drop down menu and select “copy procedure”.

2. On the procedure page click “copy procedure” from the left side of your screen.
You will need to rename the procedure and select which team you want the copy to go to. Then click ‘OK’.

To find the copied procedure go back to the procedures page by clicking the IACUC tab at the top of the screen, select the team that you copied the procedure to, and then click the procedures tab in the middle of the screen. You will then see your new copied procedure. Click on the procedure.

**Note:** It may take a few minutes before the procedure is copied to your team. You may need to refresh the page a few times.

You are now able to edit the procedure to meet your needs. As you make your changes, be sure to “continue” on each page, then click “finish”. Note the “continue” button actually saves and continues.
Create a New Procedure
If your research uses unique procedures different than LAMS standards you can create a new procedure.

On the research team page select “create procedure” on the left side of your screen.

In the procedure pop-out box:
Create a name for the procedure—please be somewhat descriptive to enable ease of use later. (e.g. Substance administration of inflammatory agents, TAC surgery.)
Select procedure type. Procedures fall into one of the categories below:
- Survival surgery-major/minor
- Non-Surgical
- Physical Restraint
- Tissue/Blood Collection
- Euthanasia
- Non-survival surgery
- Behavioral
- Substance Administration
- Food and Fluid Restriction

Your selection will determine what questions will be asked on the next page (also known as “smartform” or wizardform”).

Enter the species associated with the experiment you are creating procedures for. REMEMBER– you will need to create separate smartforms for each species. We suggest creating all of the procedures for one species, then going back through and using the “copy” feature to create the procedure for your new species (don’t forget to change the species in the copied smartform).
Answer all of the questions on the subsequent pages. If there is no appropriate response, type N/A. Use the word “animal” instead of rats or mice. This will facilitate the ‘copy’ feature later (if needed).

All smartforms ask the question to “Select the substance administration used (include anesthesia and analgesia)”. Here is where you add a substance administration procedure to describe what substances you are giving during the procedure. For instance, for surgeries you would have an analgesic and anesthetic smartforms attached in this question.

Do not add anything in the follow up question that is crossed out immediately following the selection administration used (#5).

Substance administration procedure (Table 18 from paper protocol):

Group the substances in the procedure based on how they are used- for example, you may have a induction of tumor substance administration that would include all of your tumor cells, and a separate treatment of tumor substance administration that includes all of the agents that you would use to stop tumor growth.
Click “+ADD” to add your substance.

Substance Pop out:

1. Q1 Use % in the Search box as a wildcard, or just start typing to find your substance. Alternatively, you can click on the three dots and see all of the substances available.
2. Q2 Route—use the drop down box to select the route for your substance. If multiple routes or your route is not listed, select “other”.
3. Q3 Dose—indicate dose in mg/kg or numbers of cells, use a range or the words “up to” for added flexibility. If multiple routes, then add that here. E.g. up to 5 mg/kg PO, 2-6 mg/kg IP
4. Q4 Frequency of dosage—if it is different for the different routes, you will need to put both frequencies in line with what you put for doses. Using the above example, you would have the frequency for PO first and IP second. If you have several routes and frequencies, you may consider adding the substance more than once to the table and separating them.

**Remember, the information must be clear to the reviewer.**

5. Q5 Concentration—This is typically in mg/mL.
6. Q6 Volume—maximum volume/route
7. Q7 leave blank
Preferred language and Definitions for Procedure Questions

**Survival Surgery:** Animals will recover (wake up) from anesthesia.

**Q2: Describe the surgical procedure:**
Incisions are closed in two layers (inner layer with absorbable suture, skin with wound clips [or non-absorbable suture]).

**OR**
The skin incision is closed with wound clips (or non-absorbable suture).

**Q3: Describe how the animal, surgeon and instruments will be prepared for aseptic surgery (See Help Text):**
ACUP survival surgery guidelines will be followed.
Animal Prep: hair removal followed by alternating scrubs of povidone iodine or chlorhexidine and 70% ethanol repeated 3 times.
Surgeon Prep: clean lab coat, surgical scrubs or disposable gown; mask; sterile surgical gloves. Hair bonnet/cap is recommended.
Instrument Prep: Instruments will be steam (e.g., autoclave) or gas (e.g., ethylene oxide) sterilized initially. Some items may come sterile from the manufacturer or may require chemical sterilization according to directions from the manufacturer.
If batch surgeries are performed, instruments will be sterilized between animals via glass bead sterilization. A new surgical pack will be used following the 5th animal.

**Q5: Describe the anesthetic monitoring:** Anesthesia monitoring details are in the Substance Administration Anesthesia SmartForm.

**Q6: Describe post-operative care and monitoring: (immediate post-operative and daily thereafter)** One response for Mild, one for Moderate, and one for Severe.
During and immediately following surgery, animals will receive supplemental heat (e.g., circulating warm water blanket or equivalent to prevent thermal injury) until they regain consciousness.
Animals will be continuously monitored until sternal.
Wet chow or hydrogel may be provided post-operatively.
Animals will be checked for at least 3 days following surgery to monitor (and document) the surgical site, behavior, and analgesic administration. The animal will receive analgesics as described in the Substance Administration-Analgesia SmartForm.
Suture or wound clips will be removed in 10-14 days.

**Non-Survival Surgery:** Animals will be euthanized prior to recovering from anesthesia.

**Q3: Describe how the animal, surgeon and instruments will be prepared for aseptic surgery (See Help Text):**
Animal Prep: hair will be removed
Surgeon Prep: clean lab coat and gloves.
Instrument Prep: Instruments will be clean.

**Q6: Describe post-operative care and monitoring: (immediate post-operative and daily thereafter)** NA

**Non-Surgical:** Procedure that is not surgical, may have a behavioral component but animal does not have a conscious choice (forced exercise, Hargreaves, burn).

**Q2: Describe any apparatus you will use, and provide the details of sanitation between uses:**
Apparatus may be cleaned with 70% ethanol (or equivalent) after each animal. At the end of the study, the apparatus is sanitized with a disinfectant (e.g. zepamine, peroxigard, clidox).

**Q6: Describe post-procedural care and monitoring:**
Animals will be returned to their home cage following the procedure.
Behavioral: Procedure in which animals have a choice of behaviors e.g. CPP, open field, running wheel (not forced exercise).

Q2 Describe any apparatus you will use, and provide the details of sanitation between uses:
Apparatus may be cleaned with 70% ethanol (or equivalent) after each animal. At the end of the study, the apparatus is sanitized with a disinfectant (e.g. zepamine, peroxigard, clidox).

Q3 Indicate how animals will be monitored for stress during the procedure, include any criteria for prematurely ending the session:
This procedure may be used as part of a stress paradigm. However, the procedure does not result in distress to the animal.

Q6 Describe post-procedural care and monitoring:
Animals will be returned to their home cage following the procedure.

Substance Administration (Table 18 from the paper protocol):
Q2: * Describe step-by-step the procedure for administering the substance, including route if "Other"
SQ/SC, IP-Animal is gently restrained and injection is given.
IV tail vein-Animal will be manually or mechanically restrained, and the injection is given. Following injection, pressure is applied to the injection site with sterile gauze until bleeding stops.
IV-retro-orbital under anesthesia-Animal is anesthetized, and the injection is given. Following injection, pressure is applied to the injection site with sterile gauze until bleeding stops.
Oral gavage- Animal is gently restrained and the oral gavage needle/tube is inserted and the substance is administered and needle/tube removed.

Q8 Describe the monitoring of the animal during the procedure:
Animal will be continuously monitored during the administration.

Q9: Describe post-procedural care and monitoring:
Animals will be returned to their home cage following the procedure.

Euthanasia:
Q3: Describe how death will be confirmed:
One of the secondary physical methods listed below will be performed:
Bilateral thoracotomy
Decapitation
Removal of vital organ
Cervical Dislocation (mouse only)

Tissue/Blood Collection:
Q2: Describe timing and frequency of collection and amount to be collected:
ACUP Blood and Fluid Guidelines will be followed.
Provide maximum blood volume for each collection, as well as maximum volume in a particular timeframe.
e.g. Blood samples will be taken up to 6 times, with 15 minute intervals, 50 ul (not to exceed 7.7 ml/kg every 2 weeks)
Q5 Describe post-procedural care and monitoring:
Animals will be monitored to ensure that bleeding has stopped and will be returned to their home cage.
Q7: Describe any potential complications from collection:
Tail Vein: If tail becomes damaged/unsheathed, notify LAMS veterinary staff.
If too much blood is taken/lost, subcutaneous or intraperitoneal injection of sterile 0.9% sodium chloride or lactated ringers (0.5-1 ml mouse/1-3 ml rat) depending on size of animal and amount of blood loss) is indicated.