SECTION I

SURVIVAL SURGERY PROCEDURES

APPEND TO PART I, IF APPLICABLE.
NOTE: Repeat items I1 through I15 for each species that will have survival surgery.

The following items I.1 to I.15 apply to (identify species):

I.1. MULTIPLE SURVIVAL SURGERY

I.1.1. Will any of the animals have undergone survival surgery prior to being entered into this study (e.g., by the vendor or under a different protocol)?

☐ No. Animals will not have had prior survival surgery.
☐ Yes. Animals will have had prior surgery

If 'YES', provide prior surgeries and include dates of the procedures:

I.1.2. Will any animals experience more than one survival surgery, including surgery prior to entering the study?

☐ Yes. Animals will have more than one survival surgery procedure
☐ No. Animals will have only one survival surgery procedure.

If 'YES', describe how the multiple survival surgeries, including any experienced prior to entering this study, are interrelated components of this protocol and why the multiple surgeries are necessary to achieve the scientific objective.

I.2. NARRATIVE OF SURVIVAL SURGERY PROCEDURES UNDER THIS PROTOCOL

I.2.1. Description of survival surgery procedures:

I.2.2. Specify the method of wound closure:

I.2.3. Will all sutures and/or would clips be allowed to remain in place beyond the 7th post-operative day?

☐ No. All sutures and/or wound clips will be removed on or before the 7th day after surgery.
☐ Yes. Sutures and/or wound clips will remain in place for more than 7 days.

I.3. Pre-Operative Animal Support (Not Anesthesia)

I.3.1. Specify pre-operative actions that will be taken to prepare the animals for survival surgery (select all that apply):

☐ Physical exam
☐ Overnight food withdrawal
☐ Body temperature support
☐ Clipping of fur
☐ CBC (define blood sampling method):
☐ Chemistry profile (define blood sampling method):
☐ Ophthalmic ointment to eyes
☐ Iodine (or Chlorhexidine) + alcohol skin scrub, 3 alternating cycles
☐ Drugs (other than anesthetics and sedatives) or fluids (List below):

I.4. Pre-Operative Anesthesia/Sedation/Tranquilization

I.4.1. Will pre-operative anesthesia, sedation or tranquilization be provided to the animals?

☐ No. Drugs will not be administered to the animals prior to surgical anesthesia.
☐ Yes. Pre-operative drugs will be used to calm the animals. (List below)

I.5. Intra-Operative Animal Support (Not Anesthesia)

I.5.1. Specify intra-operative care that will be provided to animals during survival surgery (select all that apply):

☐ Mechanical ventilation Heat to prevent hypothermia
☐ Intravenous fluids Cooling to prevent hyperthermia
☐ Ophthalmic ointment to eyes
☐ Other (specify):
☐ None (explain):

I.6. Intra-Operative Anesthesia

Please list all agents and dosing regimens to be used for intra-operative anesthesia.

Table I.6.A. Anesthetic Agents

To add additional rows, please attach a separate document.

ANESTHETIC AGENT	DOSE	ROUTE OF ADMINISTRATION	FREQUENCY OF ADMINISTRATION	DURATION OF TREATMENT

I.7. Neuromuscular Blocking Agents (Paralytics)

I.7.1. Will neuromuscular blocking agents (paralytics) be used at any time during the procedure?

☐ Yes. Neuromuscular blocking agents will be used.
☐ No. Neuromuscular blocking agents will not be used for the procedure.
If 'YES', provide details here:

I.8. Monitoring During Anesthesia

I.8.1. Indicate below the indices that will be used for intra-operative monitoring of animal condition and depth of anesthesia.

☐ Respiratory rate / effort
☐ Mucous membrane color
☐ Body temperature
☐ Oxygen saturation
☐ Heart rate
☐ Blood pressure
☐ Capillary refill time
☐ EKG
☐ Reflex (specify):
☐ Other (specify):
☐ Other (specify):

I.8.2. Specify the frequency at which the above indices will be recorded:

I.9. Post-Operative Animal Support During Recovery From Anesthesia

I.9.1. Indicate care that will be provided to animals during post-operative recovery from anesthesia (i.e., until sternal recumbency is regained and maintained). Select all that apply below:

☐ Heat to prevent hypothermia
☐ Cooling to prevent hyperthermia
☐ Intravenous fluids
☐ Ophthalmic ointment to eyes
☐ Other (specify):
☐ Other (specify):
☐ Other (specify):
☐ None (explain):

I.10. Monitoring During Recovery From Anesthesia

I.10.1. Indicate below the indices that will be used for post-operative monitoring of animal condition during recovery from anesthesia.

- ☐ Respiratory rate
- ☐ Mucous membrane color
- ☐ Body temperature
- ☐ Oxygen saturation
- ☐ Heart rate
- ☐ Blood pressure
- ☐ Capillary Refill Time
- ☐ EKG
- ☐ Reflex (specify):
- ☐ Other (specify):
- ☐ Other (specify):

Specify the frequency at which the above indices will be recorded:

I.11. Pain Management

NOTE: The IACUC encourages the use of pre-emptive analgesia for pain management. Analgesia must be provided as early in the procedure as possible, ideally before the procedure begins. (Please contact the Attending Veterinarian for more information on post-operative support expectations. You can also refer to the "Surgical Classification and Postoperative Monitoring" sheet found in the IRBNet "Forms and Templates" tab.)

I.11.1. Will analgesia be provided to the animal for relief of post-operative pain?

- ☐ Yes. Analgesia will be provided.
- ☐ No. Post-operative analgesia will not be provided.

If 'NO', Explain why analgesia will be withheld:
If 'YES', please list analgesics and dosing regimens on table I.11.A. below:

Table I.11.A. Analgesics

To add additional rows, please attach a separate document.

ANALGESIC	TIMING OF ADMINISTRATION	DOSE	ROUTE OF ADMINISTRATION	FREQUENCY OF ADMINISTRATION	DURATION OF TREATMENT

I.12. Post-Operative Antibiotic or Drug Therapy

I.12.1. Will antibiotics or drugs other than experimental agents be provided to animals during the post-operative period?

☐ Yes. Antibiotics and/or drugs will be administered.
☐ No. Such treatment is not planned and will be provided only if medically advised.
If 'YES' specify details here:

I.13. Single Housing During Post-Operative Recovery

I.13.1. A special exemption (Appendix U) is not required for single housing during the immediate post-operative period (for the recovery of the animal patient). This provision exists from the point of anesthesia recovery up to seven days post recovery. Please select the appropriate response which applies to this protocol. If more than one is applicable, then select multiple responses:

☐ Single housing post anesthesia is not required for this study.
☐ Animals may be singly housed post anesthesia for up to 7 days. Animals in this condition will be provided with environmental enrichment.
☐ Animals will require 7 or more days of single housing. I have included Appendix U to justify the extended use of single housing.
Which animals in your study will require single housing?

I.14. Specimen Collection From Live Animals

I.14.1. Will specimens be collected from living animals during or after the survival surgery?

☐ Yes. Specimens will be collected from living animals
☐ No. Specimens will not be collected from living animals.

I.15. Humane Endpoints which will be monitored and will be prompt intervention to prevent continued pain or distress.

According to The Guide, information that is critical to the IACUC's assessment of appropriate endpoint consideration within a protocol includes precisely defining the humane endpoint (including assessment criteria); the frequency of animal observation; training of personnel responsible for assessment and recognition of the humane endpoint; and the response required upon reaching the humane endpoint. The IACUC has determined that the list below defines the commonly accepted clinical milestones which should be regarded as humane endpoints for most terrestrial animal studies.

TABLE I.15.A. CLINICAL OBSERVATION(S)/MILESTONE(S)

Choose all of those which are appropriate for the species being used. For each milestone, indicate the action that will be taken. Add other milestones (in the row marked 'other') if applicable for defining the humane endpoints for the proposed study.

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
Infection unrelated to the protocol.	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Not eating or drinking (will require individual housing to effectively assess)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Decreased fecal and urine output (will require individual housing to effectively assess)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Delayed wound healing (requires checking at least daily until suture removal)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
Sudden behavioral change (Ex: aggression, guarding, hiding)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Licking, biting, scratching of the operative / injection site (requires checking at least daily until suture removal)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Poor posture or ambulating difficulty (Ex: tense, tucked-up, stiff gait)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Lost hair coat condition (Ex: ruffled fur, lack of grooming,	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
piloerection)					
Sudden activity level change (Ex: restlessness, pacing, reluctance to move)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Unexpected sweating or salivation (Ex: stressed rodents salivate excessively when stressed)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
'Painful' facial expression (Ex: grimace, eyes dull, pupils dilated, pinning of ears)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Oculonasal discharge	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
(Ex: rats shed porphyrin pigment when stressed)					
Teeth grinding	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Signs of moderate to severe pain or distress that was not anticipated by the study plan.	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Body weight relative to an age-matched reference. (Ex: Requires regular <q 48 hours> weighing)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Self-mutilation (requires checking at least daily	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
until suture removal)					
Neurological disorders (e.g., seizures, blindness, ataxia) that were not anticipated by the study plan.	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Cardiopulmonary disorders (e.g. sudden weakness, vascular collapse, coma) that were not anticipated by the study plan.	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	
Abnormal feeding or defecation for 48 hours (e.g., decreased feed or water intake	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

CLINICAL OBSERVATION/MILESTONE	APPLICABLE TO MY PROPOSAL	FREQUENCY OF OBSERVATION (e.g., 4hrs., 12 hrs., weekly)	PROTOCOL PERSONNEL ARE TRAINED TO RECOGNIZE	REPONSE REQUIRED UPON REACHING THE HUMANE ENDPOINT	PROVIDE DURATION (# OF DAYS, WEEKS, ETC.) OF MONITORING OR A SCIENTIFIC JUSTIFICATION FOR NOT USING THE MILESTONES LISTED
and/or decreased fecal production that is unrelated to the study plan).					
Non-weight bearing for 72 hours (e.g., inability to maintain upright posture)	☐ yes ☐ no		☐ yes ☐ no	☐ Consult Vet ☐ Euthanize	

I.15.1. Other humane endpoints which will be employed in this project:

I.15.2. Other humane endpoints which will be employed in this project: