**Appendix 1 – Surgical Procedures**

*Duplicate this appendix for* ***each surgical procedure****. Procedures performed under the same period of surgical anesthesia may be combined.*

**1. Identification**

a. Procedure name (include sham if applicable):

b. Species:

c. Number of animals:

d. Survival surgery:

[ ]  No (complete Sections 1 and 2)

[ ]  Yes (complete Sections 1, 2 and 3)

e. Surgical Team:

|  |  |
| --- | --- |
| Responsibility | Lab Personnel(specify name) |
| Pre-Operative Prep: |  |
| Assistant(s): |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**2. Procedure Details**

**a. Where will the surgery be performed?** *(Check all that apply)*

Building and Room #:

**b. Aseptic Procedures:**

*Sterile instruments, implants and a sterile field are required for ALL surgeries in which the animal will recover from anesthesia. Sterile materials are recommended for other procedures. Indicate methods used to ensure the sterility of these materials, excluding materials that are sterilized by the manufacturer (e.g., surgical gloves, surgical blades, suture, etc.).*

|  |  |
| --- | --- |
| **Sterilization of Instruments** *(Check all that apply)* | **Sterile Field** |
| [ ]  High-pressure/temperature steam (autoclave) | [ ]  Surgeon cap  |
| [ ]  Gas sterilization (ethylene oxide) | [ ]  Face mask |
| [ ]  Dry heat (hot bead sterilizer) | [ ]  Surgeon scrub |
| [ ]  Plasma sterilization  | [ ]  Sterile gown |
| [ ]  Chemical sterilant: type:       duration of treatment:       | [ ]  Sterile drapes |
| [ ]  Other: (*Describe*):       | [ ]  Sterile gloves  |
| [ ]  Other: (*Describe*):  |

**c. Pre-operative procedures**

1. Identify all pre-operative procedures performed during the surgical preparation

The following will be employed for preparation of the animal(s) prior to surgery (*check all that apply*):

[ ]  Fasting (*rarely used in rabbits or rodents*)

Specify timing and duration:

[ ]  Withhold water

Specify timing and duration:

[ ]  IV Catheter placement

Catheter size, vessel(s) accessed

[ ]  Intubation

[ ]  Sterile ophthalmic ointment

[ ]  Warming pads to maintain body temperature

[ ]  Removal of hair from the surgical site

[ ]  shaving

[ ]  depilatory (e.g. Nair)

[ ]  Application of skin disinfectant

[ ]  Betadine/chlorhexidine followed by alcohol, repeated 3 times

[ ]  Other (describe):

[ ]  Other (describe):

**d. Pre-operative and intraoperative anesthesia, analgesia, and other medications:**

*1. Identify the anesthetics, analgesics and other agents administered prior to or during surgery. Examples include antibiotics, sedatives, tranquilizers, anticholinergics, paralyzing agents, fluids, or other pharmaceuticals.*

| **Agent** | **Dose/volume** | Route (e.g. iv, ip, sc) | **Frequency of Administration****(e.g. once, continuous, other)** |
| --- | --- | --- | --- |
| **mg/kg** | **mL** |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |
|       |       |       |       |       |

2. Monitoring Depth of anesthesia

*Identify the metrics used to confirm and monitor anesthesia during the surgical procedure*.

|  |  |
| --- | --- |
| [ ]  Toe pinch | [ ]  Heart rate (requires monitor) |
| [ ]  Eye blink | [ ]  Jaw tone (large animals) |
| [ ]  Respiration rate | [ ]  Blood pressure (large animals) |
| [ ]  Mucous membrane color | [ ]  Other       |

3. Paralytics

1. Are paralytics employed during this surgical procedure? [ ]  Yes [ ]  No

*If "yes," will anesthesia be used when paralytics are employed?* [ ]  Yes [ ]  No

1. If animals are under anesthesia and the influence of paralytics, how will animals be monitored for

pain perception? *(i.e. heart rate, ECG, etc.*)

**e. Surgical Procedure Description**

Provide a complete narrative of the surgical procedure. *You must provide all of the relevant details without making reference to other protocols.*

**3. Survival Surgery and Post-Operative Care/Monitoring**

**a. Implanted Devices**

*1. List all implanted materials and/or devices (e.g. ligatures, telemetry units, catheters, electrodes, fracture plates, pumps, etc.)*

|  | **Implanted Device**(description, size, composition, etc.) | **Anatomic****Location** | **Duration (days)** |
| --- | --- | --- | --- |
| 1 |       |       |       |
| 2 |       |       |       |
| 3 |       |       |       |
| 4 |       |       |       |

*2. Specify methods used to sterilize implanted materials and/or devices. (Check all that apply)*.

|  |  |
| --- | --- |
| Sterilization Method | Material and/or Device(Specify number from (e)(1) above) |
| [ ]  Received sterile from the manufacturer |       |
| [ ]  High-pressure/temperature steam (autoclave) |       |
| [ ]  Gas sterilization (ethylene oxide) |       |
| [ ]  Dry heat (hot bead sterilizer) |       |
| [ ]  Plasma sterilization  |       |
| [ ]  Chemical sterilant: Type:       duration of treatment:       |       |
| [ ]  Other: (*Describe*):       |       |

**b. Tissue Apposition and Wound Closure.** *(Check all that apply)*.

Deep Tissue:

[ ]  Sutures

Type:

Size:

Skin:

[ ]  Sutures

Type:

Size:

When will these be removed?

[ ]  Wound clips

When will these be removed?

[ ]  Staples

When will these be removed?

[ ]  Animal tissue adhesive (e.g. VetBond)

**c. Post-Operative Analgesia.** *(Check all that apply)*.

[ ]  Analgesics will be used to provide post-operative pain relief to the animals following surgery

*Identify the analgesics and anesthetics that will be given.*

| **Agent** | **Dose /Volume** | Route (e.g. iv, ip, sc) | **Frequency of Administration****(e.g. times/day)** | **Duration of Treatment****(e.g. days)** |
| --- | --- | --- | --- | --- |
| **mg/kg** | **mL** |
|       |       |       |       |       |       |
|       |       |       |       |       |       |
|       |       |       |       |       |       |
|       |       |       |       |       |       |
|       |       |       |       |       |       |

[ ]  Post-operative pain relief will be withheld

*Provide a justification for not using postoperative analgesics. Include supporting literature references to justify the exclusion of postoperative analgesia.*

**d. Postoperative Monitoring**

1. What will be the duration of survival after surgery?

1. What will be the frequency of monitoring from surgery to euthanasia?

(*Note: The* *typically accepted minimum monitoring might include twice a day for 3 days then 2-3 times weekly for the duration of the experiment. Consult the veterinarians.)*

1. What parameters will be monitored? *Check all that apply.*

[ ]  Behavior and activity level

[ ]  Body weight

 *Specify frequency of weighing*

[ ]  Overall condition

[ ]  Body temperature

 *Specify frequency*

[ ]  Food and water intake

[ ]  Hydration status

[ ]  Other:

1. Attach a sample post-op monitoring form.

[ ]  Post-Operative Monitoring Form

Who will provide post-op support?

**e. Skin Management for Transcutaneous Implants**

1. Describe management of indwelling transcutaneous implants, such as venous catheters, electrical leads, central lines, etc. Include skin care, antibiotic prophylaxis, etc.

2. How will you manage the implant (e.g. cleaning and flushing catheters)?

**f. Long-Term Consequences of the Surgical Model**

1. Might this surgical model lead to persistent, chronic pain or distress unrelieved by analgesics?

[ ]  Yes [ ]  No

*If Yes, place these animals under pain category E under question 5a of the main Animal Care and Use Protocol (ACUP) and complete 2-3 below.*

2. What are the potential long-term consequences or complications? *Check all that apply.*

[ ]  Long-term pain or discomfort

[ ]  Immobility

[ ]  Organ failure

[ ]  Paralysis

[ ]  Paresis (muscle weakness, partial paralysis)

[ ]  Difficulty obtaining food and/or water

[ ]  Other:

3. What methods or non-pharmacological environmental comfort measures will be employed to minimize pain or distress? *Check all that apply.*

[ ]  Paper bedding

[ ]  Access to soft pellet feed

[ ]  Gel packs

[ ]  Housing Huts

[ ]  Other: