| MOLab Bookkeeping for Animal Experiments  |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|---|----------|----------|--------------------------------------|--------------------|-----------------------|-----------------------------|------------------|----------------------------|-------------------------------|----------------------|------------------------|
| (For ACUP #71445: Biological Factors on Bone and Soft Tissue Defects in Rat Models) |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
| Date  | Cage#    | Ear Tag# | Anesthetic<br>agent(s)/<br>dose used | Analgesics<br>used | General<br>conditions | Indicators of pain/distress | Animal<br>weight | Mass or<br>injury<br>sites | Xenogen<br>microCT<br>imaging | Date of<br>Sacrifice | Investigator<br>(You!) |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   |          |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |
|   | <u> </u> |          |                                      |                    |                       |                             |                  |                            |                               |                      |                        |

## Highlights from ACUP #71445 (Biological Factors on Bone and Soft Tissue Defects in Rat Models)

Anesthetic choices: (1) 1-4% **Isoflurane** gas (continous, inhalation); or (2) **ketamine/xylazine** (40-80mg/kg ketamine and 5-10 mg/kg zylazine) i.p. injection A booster or supplemental dose of ketamin (17-33mg/kg, i.p.) may be administered to ensure animals remain properly anesthetized.

Immediately prior to the intitial incision, Buprenophine (50ug/kg, IM) and Meloxicam (1.0mg/kg, subcu) will be used as a peri-operative analgesic and given subcutaneously after the animal has been anesthetized, but before the initial incision is made.

First 24h post-OP: Buprenorphine 50ug/kg IM q12h and Meloxicam 1 mg/kg SQ q24 will be used for analgesia. Animals will be evaluated by the investigators to assess the need for additional doses of pain medication.

Second 24h post-OP: Buprenorphine 50ug/kg IM q12h and Meloxicam 1 mg/kg SQ q24 will be used for analgesia. Animals will be evaluated by the investigators to assess the need for additional doses of pain medication.

**48h post-OP**: Buprenorphine 50ug/kg IM and Meloxicam 1 mg/kg SQ will be only used as necessary for analgesia. Animals will be evaluated by the investigators to assess the need for additional doses of pain medication.

Rats will be monitored daily for the first three days, then 2 times/week thereafter.

Animals injected with adenoviruses should be considered ABSL2 (biohazardous) within the first 72 hours after injection housed in BSF

If staples/sutures are used to close incisions, staples/sutures should be removed 10-14 days postoperatively

Rats will be monitored for up to 12 weeks

The rats will be kept in special rat housing cages, with no more than 2 rats per cage (one rat/cage may be needed if disturbing wound needs to be avoided). Assessment of pain or distress will be based on many different criteria including: decreased activity, abnormal postures, hunched back, muscle flaccidity or rigidity, poor grooming, decreased food or water consumption, decreased fecal or urine output, dehydration, decrease or increase in body temperature, decrease or increase in pulse or respiratory rate, physical response to touch (withdrawal, lameness, abnormal aggression, vocalizing, abdominal splinting, increase in pulse or respiration), self-aggression, photophobia, and/or vomiting or diarrhea

If animals develop infection, antibiotics may be used in consultation with Carlson ARC staff. Animals with any evidence of wound breakdown, hardware loosening (failure of the implant used to stabilize the femur), excessive lameness, excessive pain, failure to ambulate, and/or inability to reach food or water, or infection (Signs of infections include drainage from the surgical incision or erythema that does not improve with antibiotics) will be removed from the study group. If any animal shows signs of pain/distress, it will be euthanized by CO2 overdose/cervical dislocation.