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|  | Department of Laboratory Animal Resources |
|   | Guideline                                 |
| Rodent Anesthesia Recommendations   |   |

### RAT Anesthetic Formulary

| Agent                              | Dose  | Route                            | Duration   | Notes  |
|------------------------------------|---|----------------------------------|------------|--|
| Isoflurane                         | 3-5% induction                                  | Inhalation via induction chamber | Continuous | Safe and effective. Precision vaporizer and scavenging required for proper use.  |
|                                    | 1-3% maintenance                                | Inhalation via nose cone         |            |  |
| Ketamine-xylazine                  | K: 75-100mg/kg<br>X: 10 mg/kg                   | IP                               | 20-30 min  | If additional time is needed, boost only with ketamine. Do not redose xylazine.  |
| Ketamine boost                     | 25-30 mg/kg                                     | IP                               |            | ~1/3 dose ketamine only  |
| Ketamine - xylazine - acepromazine | K: 40-50 mg/kg<br>X: 2.5 mg/kg<br>A: 0.75 mg/kg | IP                               |            | If additional time is needed, boost only with ketamine. Do not redose xylazine.  |
| Bupivacaine 0.25%                  | <2 mg/kg  | SC or topical                    | Once       | One dose lasts 4-8 hours<br>Injected SC around the incision or applied topically on the skin incision prior to wound clips or skin sutures |
| Atipamezole                        | 0.1-1 mg/kg                                     | IP or SC                         |            | Reverses xylazine for a faster recovery  |

### MOUSE Anesthetic Formulary

| Agent             | Dose                           | Route                            | Frequency  | Duration  |
|-------------------|--------------------------------|----------------------------------|------------|---|
| Isoflurane        | 3-5% induction                 | Inhalation via induction chamber | Continuous | Safe and effective. Precision vaporizer and scavenging required for proper use. |
|                   | 1-3% maintenance               | Inhalation via nose cone         |            |   |
| Ketamine-xylazine | K: 90-100 mg/kg<br>X: 10 mg/kg | IP                               | 20-30 min  | If additional time is needed, boost only with ketamine. Do not redose xylazine. |

|                                    |  |               |      |  |
|------------------------------------|--|---------------|------|--|
| Ketamine boost                     | 30 mg/kg                                     | IP            |      | ~1/3 dose ketamine only  |
| Ketamine - xylazine - acepromazine | K: 80-100 mg/kg<br>X: 10 mg/kg<br>A: 3 mg/kg | IP            |      | If additional time is needed, boost only with ketamine. Do not redose xylazine.  |
| Atipamezole                        | 0.1-1 mg/kg                                  | IP or SC      |      | Reverses xylazine for a faster recovery  |
| Bupivacaine 0.25%                  | <2 mg/kg                                     | SC or topical | Once | One dose lasts 4-8 hours<br>Injected SC around the incision or applied topically on the skin incision prior to wound clips or skin sutures |

Please contact the Attending Veterinarian to discuss using alternative drugs and treatment schedules.

#### References

ACLAM position statement. "Guidelines for the Assessment and Management of Pain in Rodents and Rabbits", [www.aclam.org](http://www.aclam.org).

Flecknell P. Laboratory Animal Anaesthesia, 4th ed., 2016.

University of British Columbia Species-Specific Considerations

<https://animalcare.ubc.ca/conducting-your-research/rodent-anesthesia-and-analgesia/species-specific-considerations>

University of Pennsylvania Mouse Anesthesia and Analgesia Recommendations

<https://www.spandidos-publications.com/var/MouseAnesthesiaAnalgesiaRecommendations.pdf>.