Guidelines on Postoperative Analgesia

BASIS:

- **USDA Animal Welfare Act Regulations** §2.31(d)(1)(iv)(A) and (ix): “Procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedatives, analgesics, or anesthetics, unless withholding such agents is justified for scientific reasons, in writing, by the principal investigator and will continue for only the necessary period of time…Activities that involve surgery include appropriate provision for pre-operative and post-operative care of the animals in accordance with established veterinary medical and nursing practices.”

- **PHS Policy** IV.C.1.a-b: “Procedures with animals will avoid or minimize discomfort, distress, and pain to the animals, consistent with sound research design. Procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedation, analgesia, or anesthesia, unless the procedure is justified for scientific reasons in writing by the investigator.”

- **Guide for the Care and Use of Laboratory Animals**, p. 64: “An integral component of veterinary medical care is prevention or alleviation of pain associated with procedural and surgical protocols…Pain is a stressor and, if not relieved, can lead to unacceptable levels of stress and distress in animals. The proper use of anesthetics and analgesics in research animals is an ethical and scientific imperative…In general, unless the contrary is known or established, it should be assumed that procedures that cause pain in humans also cause pain in animals.”

Guidelines:

- Analgesics must be provided to all animals following survival surgery unless scientific justification for withholding post-operative analgesics is provided by the investigator and approved by the IACUC, or if an ACS veterinarian examines the animal and determines that analgesic administration is no longer necessary. In cases where post-operative analgesics can/will not be administered for scientific reasons, the animals must be listed in Pain Category 3 (i.e., pain/distress cannot be relieved by use of anesthetics, analgesics, or tranquilizers as the use of these agents would interfere with the experimental design).

- The use of local pain-relieving drugs such as Marcaine® (bupivacaine), in addition to systemic analgesia, may be indicated for some procedures resulting in significant disruption of the skin (e.g., Alzet® pump placement, catheter exteriorization), as these drugs may help to block the onset of the pain cascade due to disruption of the dermal nerve cells. Local analgesics are not intended for use in lieu of systemic analgesics, unless the withholding of systemic analgesia is scientifically justified.

- Major survival surgeries require at least 48 hours of post-operative analgesia, and then as needed if the animal still appears to be in pain. For major survival surgeries, consultation with the veterinarian should also include consideration of pre-operative analgesia. A major survival surgery is defined as any procedure that penetrates and exposes a body cavity, produces substantial impairment of physical or physiologic functions, or any procedure that requires the use of more than a single application of a short-term anesthetic.

- Minor procedures require at least 24 hours of post-operative analgesia, and then as needed if the animal still appears to be in pain.
For guidance on analgesic selection and use, please contact the Thiel veterinarian or see *Normative Data and Guidelines for Selection and Use of Anesthetics, Analgesics, and Tranquilizers in Laboratory Animals*. 