

**PORTLAND VETERANS AFFAIRS MEDICAL CENTER  
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (PVAMC IACUC)  
ANIMAL CARE AND USE GUIDELINES**

**CHECK ONE:**

- I agree to comply with the following guidelines.
- I have attached written justification for deviation from these guidelines, and a description of the methods to be employed.

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

**GUIDELINES FOR BLEEDING TECHNIQUES**

***Guidelines.***

***Non-terminal bleeding***

1. The volume of blood removed at any one bleeding should not exceed 1% of body weight (assume 1 ml blood weighs 1 gm).
2. Repetitive bleedings of  $\leq$  1% of body weight may be performed every 2 to 4 weeks.
3. Larger volume or more frequent bleeding than described in items # 1 or 2 above requires:
  - a. written justification in the animal care protocol and prior approval by the PVAMC IACUC;
  - b. monitoring of hematocrit, hemoglobin, and total plasma protein.

***Non-Terminal Bleeding Techniques***

1. Restraint devices may be utilized provided adequate care is used to prevent injury.
2. To use tail snipping for rodent blood collection, a maximum of 0.2 cm of tail may be removed. In neonates or juvenile mice, this should be followed by sealing of the tail in wax, or other measures, to prevent maternal cannibalism. This method:
  - a. allows repeated sampling;
  - b. does not require anesthesia or analgesia;
  - c. and requires the classification of animals as category C.
3. Medial or lateral saphenous blood collection:
  - a. allows repeated sampling;
  - b. does not require anesthesia or analgesic;
  - c. and requires the classification of animals as category C.
4. Periorbital bleeding
  - a. may be performed in mice and rats, but not other species;
  - b. requires anesthesia;
  - c. and requires the classification of animals as category D. If the investigator wishes to be exempted from the anesthesia requirement, written scientific justification must be provided to the IACUC. If the IACUC approves the

exemption, anesthetics may be withheld and the animals will be classified as category E.

5. Blood withdrawal from vessels of ear pinna (e.g., in rabbits) may be facilitated by dilatation of blood vessels by
  - a. increasing body temperature by use of a heat lamp or an increase in room temperature;
  - b. use of a tranquilizer such as Acepromazine;
  - c. gentle finger-tapping of the skin overlying the vessel;
  - d. or the use of a local anesthetic creme such as EMLA®.
  - e. This procedure is classified as category C.
  
6. Current veterinary practice contends that cardiac puncture may only be used for terminal collection of blood, due to the danger of cardiac tamponade, pulmonary hemorrhage, and pneumothorax. However, it is acknowledged that this may be an acceptable method under certain circumstances with experienced personnel. The IACUC must approve the use of cardiac puncture for survival procedures. General anesthesia is required for this procedure. This procedure is classified as category D.

Terminal Bleeding

1. Terminal bleeding (e.g., cardiac puncture) must be performed under general anesthesia. This procedure is classified as category D.