

Use of Radioactive Materials in Animals

Purpose: To outline the requirements for the use of Radioactive Materials in animal research.

General: Radioactive Materials may be used in animals only with the approval of the Radiation Safety Committee (through a valid Permit) and the Animal Care and Use Committee (through a valid protocol). Use of radioactive materials in animals is separately reviewed by the RSO on a case by case basis.

All requirements for the safe use of radioactive materials remain in effect for procedures involving animals. These include the requirements for training, surveys, waste disposal, labeling and dosimetry.

Injection or administration areas must be surveyed (with an appropriate meter and by wipe test) after the administration of radioactive material. *This survey must be documented and retained for inspection.*

Cages housing radioactive animals must be labeled as radioactive (including isotope, date and quantity administered), and must be changed by the investigator (or appropriate designated staff). The RSO will determine if cages require shielding when the protocol is approved.

Rooms where radioactive animals are housed must be posted as Radioactive Materials Areas. Rooms must be surveyed and determined to be free from contamination before they may be de-posted.

Animal carcasses, bedding and other radioactive wastes generated as a result of the experiment should be disposed of through Radiation Safety in a timely manner. The use of disposable cages is permitted if allowed by DCM. Cages must be surveyed and decontaminated if necessary before being transferred to Comparative Medicine for cage cleaning.

Materials:

1. Calibrated Radiation Survey Meter appropriate for the isotope being measured.
2. Radiation tags and labels
3. Waste Bags and Radioactive Waste Log
4. Wipes, swabs, etc for wipe tests
5. LSC or Gamma counter to count wipes
6. Radiation Survey Record and pen (to document results)

Procedure: To be carried out by Authorized user or designee.

A. Administration of Radioactive Materials

1. Review any special conditions noted in the IACUC or Radiation Safety approvals and consult the Radiation Safety Office if necessary.
2. Ensure that there are enough labels, bags, tags and associated materials to properly label radioactive materials.
3. Notify the RSO before injecting or administering radioactive materials. LACU must also be notified if the animals are to be housed.
4. Administration of radioactive materials must be done using appropriate contamination control measures (such as absorbent pads) and shielding. The use of safety needles is encouraged.
5. Survey the procedure room after administration (includes a meter survey and wipe tests). Document the survey results and retain them for inspection.
6. Prepare the resulting radioactive waste for transfer to the Radiation Safety Office. Waste should be segregated by type and packaged according to standard procedures.
7. If animals will be housed, label each cage with the isotope, activity administered and the date. The RSO will determine if shielding of the cages is required.
8. Label the room housing the radioactive animals.

B. Care of Radioactive Animals

1. LACU staff will not handle radioactive animals. This is the responsibility of the investigator.
2. Cage changes for radioactive animals must be performed by the investigator and or designated staff.
3. Cages must be surveyed and decontaminated before they are transferred to LACU for cleaning. Records of these surveys must be maintained for inspection.
4. Resulting radioactive waste must be prepared in accordance with standard procedures and transferred to Radiation Safety for disposal.

C. Disposal of Radioactive Animals

1. Carcasses that are deemed not to be radioactive may be transferred to LACU for disposal.
2. Radioactive animal carcasses must be packaged and transferred to Radiation Safety for disposal.
 - a) A carcass is not radioactive waste if it contains ≤ 0.05 uCi/g of H-3 or C-14.
 - b) A carcass may also be determined to be non-radioactive by the RSO

D. Emergency Response

1. The loss or escape of any radioactive animal must be reported immediately to the RSO (901-448-6114)
2. Spills or Injury involving radioactive materials must be reported immediately to the RSO. Follow standard spill response procedures.