

UNIVERSITY OF HOUSTON

Radiation Safety Manual

Radiation Safety Procedures for the Use of Radioactive Material In Animals

All radioactive material use at the University of Houston must be approved by the Radiation Safety Officer and authorized by the Radiation Safety Committee. All forms can be found in the Radiation Safety Manual located via the Internet at <http://www.uh.edu/plantops/ehrm>.

A Principal Investigator planning to use radioactive materials in animals must fill out an Application for Use of Radioactive Material in Animals and send it to Radiation Safety at EHRM-1005, for review by the Radiation Safety Officer.

The use of radioactive material in animals requires additional safeguards in the handling of affected animals. Investigative procedures involving animal systems vary widely as do applicable safety techniques. The information provided on the application will enable Radiation Safety to formulate necessary safety measures and assist the Principal Investigator in implementing these measures. It is important that all pertinent information is included and the application totally completed. Radiation Safety Personnel will perform a compliance inspection prior to allowing radioactive material use.

Details concerning the actual use of animals must be worked out with Animal Care Operations and the research protocol approved by the Animal Care Committee. No research activities can be started using animals without prior approval.

The Radiation Safety Officer will submit all applications to the Radiation Safety Committee for approval. The Radiation Safety Officer may give interim approval to Principal Investigators for the Radiation Safety Committee. Approved Principal Investigators will receive an amended Authorization Permit to work with radioactive material in animals, which is proof of radiation authorization at UH and may be submitted with Grant Proposals. Once authorized, the Principal Investigator will remain so until sublicense termination by the Principal Investigator or revoked by the Radiation Safety Committee for noncompliance. The Animal Care Committee will be notified and supplied a copy of the approved application.

The PI is responsible for the overall radiation safety of the project, including radiation monitoring of the animals, cages, and procedures; analytical determination of radioactivity in urine, feces, and bedding; and labeling all cages

containing radioactive animals. Tags for this purpose must indicate the radioisotope, the activity (in μCi or mCi) and the date. Animal Care Operations must be notified at least five working days prior to housing radioactive animals in Animal Care. Such notification is not necessary for use within the Principal Investigator's labs.

All animal remains, i.e., viscera, tissue, serum, or other fluids, and the carcass, containing radioactive material (except tritium (^3H), carbon-14 (^{14}C) and Iodine-125 (^{125}I) as described below) are to be disposed as follows. Place the remains in a yellow radioactive materials waste bag. Secure the bag shut with tape and attach an Incineration Tag showing the radioisotope, the activity (in μCi or mCi) and the date. The bag is to be placed in the radioactive material labeled freezer in the Animal Care Facility as prearranged with Animal Care personnel.

Animal remains containing Tritium (^3H), Carbon-14 (^{14}C) and Iodine-125 (^{125}I), in quantities less than 0.05 microcuries per gram weight, may be disposed of as non-radioactive waste. Place the remains in a clear waste bag without a radioactive material label. The bag is to be placed in the non-labeled freezer in the Animal Care Facility as prearranged with Animal Care personnel. The Principal Investigator must continue to keep an inventory record with the date, activity, and radioisotope (^3H , ^{14}C , or ^{125}I) used in the animal. The following table will help in determining activity levels in animal remains that may be disposed of as non-radioactive waste.

AMOUNT OF H-3, C-14 OR I-125 IN ANIMAL REMAINS
THAT MAY BE DISPOSED OF AS NON-RADIOACTIVE WASTE

Weight		Activity	Weight		Activity
gm	lb.	μCi	kg	lb.	μCi
100	0.22	5	2.5	5.5	125
200	0.44	10	3.0	6.6	150
300	0.66	15	3.5	7.7	175
400	0.88	20	4.0	8.8	200
500	1.1	25	4.5	9.9	225
600	1.32	30	5.0	11	250
700	1.54	35	7.5	16.5	375
800	1.76	40	10	22	500
900	1.98	45	20	44	1.0 mCi
1 kg	2.2	50	30	66	1.5 mCi
1.5 kg	3.3	75	40	88	2.0 mCi
2.0 kg	4.4	100	50	110	2.5 mCi