

**UNIVERSITY OF CALIFORNIA SAN DIEGO
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE**

Policy and Guidelines on Breeding Colonies

Protocol Approval

All Principal Investigators are required to have a current IACUC-approved Animal Use Protocol on file in order to acquire, purchase or breed laboratory animals.

Regulations

Compliance with all current county, state, and federal regulations is required.

Individuals conducting breeding programs must be adequately trained by attendance at the ACP Breeding Colony training class.

If the breeding colony is located outside of the ACP-managed vivarium, the PI must obtain IACUC approval for a Satellite Facility and fulfill all obligations as detailed in IACUC Policy on Satellite Facilities.

Quarantine

If the animals are acquired from an unapproved vendor, it may be necessary to quarantine them upon arrival prior to admission to an animal facility. The circumstances will vary greatly from species to species, and the handling will be done by the methods outlined in the Standard Operating Procedure for each individual species. All animals must be ordered through the AAC who will advise investigators of any additional paperwork necessary.

Mating Systems

These can vary according to investigators and species, as long as space and psychological needs of each species are met. For specific information on Mice – see Policy 16.01.

Weaning

This will also vary by species. Most rodent species will be weaned at 21 days. For specific information on Mice – see Policy 16.01. Exceptions can be made by special request in an Animal Use Protocol or Amendment. If the breeding scheme or weaning age exception has not been approved by the IACUC, the investigator will be cited with a compliance deficiency.

Documentation

Cage cards: in addition to the information listed on the computer-generated ACP cage cards, necessary information on breeding cages includes date set-up, date plugged, date born, number born, date weaned, number weaned. Optional information can include ID number of parents and reference number (pen number) of offspring for ease of tracking. Additional necessary information on post-weaning cages includes strain, sex, date born, date weaned, if positive for transgene or mutation, and intended use (breeding, experiment, protocol #, etc). Optional information can include sire/dam number, or reference number.

Lab records

Lab records should be organized in such a manner as to make tracking offspring simple. Information necessary includes sire/dam number, date and number born, date and number weaned, and how offspring are used. This should include if they are euthanized (reason and date), died (reason and date), used in an experiment, recycled into the breeding colony, or transferred to another protocol or Investigator. Disposition of all post-weaning animals should be noted in the lab notebook.

Reporting

Any animals transferred to another protocol or Investigator must be reported and an animal transfer request completed and submitted to the Animal Care Program at <http://animalhealth.ucsd.edu/Acquisitions/Index.aspx>

The number of animals used must be reported monthly to the Animal Care Program at <http://animalhealth.ucsd.edu/Acquisitions/Index.aspx>. Failure to report animal numbers monthly will result in the inability to order additional animals for that protocol.

Nutrition

Nutritional needs will be provided for as noted in the Animal Care Program Standard Operating Procedures for each individual species.

Veterinary Care

Veterinary care will be provided for all animal species. Details are supplied in the Animal Care Program Standard Operating Procedures for each individual species.

Genotyping of Rodents

The generation of transgenic mice commonly requires collection of tissue samples for genetic analysis. Tail tip excision, ear punch, peripheral blood collection or analysis of saliva are acceptable methods of tissue collection provided the guidelines below are followed. The IACUC requires that anesthesia must be administered to mice when the sampling method is associated with more than momentary pain or distress.

Ear Punching

Ear punching is commonly used as an identification method in rodents. It is performed using an instrument that removes a small (0.5-1 mm) circular section of tissue from the ear pinna. Multiple samples can be collected from one or both ears. Collection of the small tissue samples produced during ear punching may generate enough tissue (DNA) to allow analysis by PCR. Anesthesia is not required when performing ear punches on mice.

Peripheral Blood Collection

Peripheral blood can provide tissue for genetic analysis. For more information or training in blood collection methods from mice, please contact the Training Coordinator at 822-5686 or cmichelleti@acp.ucsd.edu.

Saliva Analysis

Genetic analysis of oral epithelial cells collected in saliva from mice has been described and offers an alternative and noninvasive method of genetic analysis in the mouse. This method involves collecting a saliva sample from weanling mice by oral wash using a plastic pipette tip followed by nested PCR analysis. For more information refer to *Nature Biotechnology* 14:1146-1148, 1996.

Tail Tip Excision

In pre-weanling mice: Anesthesia is not required for mice < 21 days of age if less than 5 mm of the tail is excised. Anesthesia is required for mice < 21 days for excision of more than 5 mm or if repeated excisions of tail are required.

In adult mice: Anesthesia is required for mice that undergo tail tip excision at > 21 days of age.

Hemostasis: It is important that complete hemostasis be achieved when performing tail tip excisions, for example by the use of cautery agents such as silver nitrate. The use of a heated scalpel blade is a recommended technique because it accomplishes both amputation and cautery. The scalpel blade can be heated easily in a glass bead sterilizer.

Identification of Rodents

Acceptable Methods:

Ear Punching: Ear punching is commonly used as an identification method in rodents. It is performed using an instrument that removes a small (0.5-1 mm) circular section of tissue from the ear pinna. Multiple samples can be collected from one or both ears. Collection of the small tissue samples produced during ear punching may generate enough tissue (DNA) to allow analysis by PCR. Anesthesia is not required when performing ear punches on mice.

Micro-Tattooing: A permanent mark, which is easily readable, can now be achieved with the use of micro-tattooing forceps on rodents. It is humane, rapid, easy to apply, and allows for an almost infinite amount of ID numbers. Requires anesthesia and training.

MicroChip: Injection of small microchip subcutaneously between the scapulae and read with a transponder. This method is easy, safe, reliable, and the microchips are sometimes reusable after sterilization.

Ear-tagging: With ear tagging, a metal tag with an ID # is attached to one ear of the mouse. Due to the size of the tag and the rate at which the ear develops, this is routinely performed on weaned animals. However, disadvantages are that tags are burdensome to the animal and can fall out.

Acceptable only with scientific justification:

Toe clipping:

Toe clipping (removal of the first bone of certain toes corresponding to a predetermined numbering code) as a method of identification should be used only when no other individual identification method is feasible.

Because toe-clipping can alter the gait or weight-bearing ability of a rodent's rear limbs, the *Guide* limits its use to justified instances. According to the 1996 edition, toe-clipping "should be used only when no other individual identification method is feasible and should be performed only on altricial neonates." The IACUC has adopted the following policy in accordance with these guidelines:

Investigators considering using toe-clipping as a means of rodent identification must first show that they have considered alternative methods of identification.

The investigator must provide the IACUC with a justification of why toe-clipping is necessary for identification of rodents, including a discussion of why alternative methods are unsatisfactory.

Toe-clipping is limited to rodents 7 days old or less and should be limited to one digit per extremity.