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Guidelines for Breeding of Mice and Rats and Pain/Distress Classification

Breeding of Mice and Rats

Mating:


- Mice are to be mated at 6 – 8 weeks of age
- Rats are to be mated at 8 – 10 weeks of age
- Breeding can be done in pairs or trios (two females and one male). Occasionally, strains that have small litters or are poor parents may be bred in harems (several females with one male).
- Time-mating for 1 male: 1 female or 1 male: 2 females can be done if required by the experiment.
- Trio & Harem breeding will require justification and approval from the IACUC.
- There should not be more than one male in a breeding cage.
- Mice and rats selected as breeders should be healthy and from parents with good breeding history.
- Successful mating can be checked by the presence of a vaginal plug or by checking for sperms on a vaginal smear.

Weaning:

- Weaning should be done during routine cage changing, or if a female is observed to have a second litter during routine inspections. Animals are to be weaned and placed in social groups whenever possible, single housing should only be considered if there are overriding welfare concerns, an exemption has been authorized by the IACUC or on instruction from the Attending Veterinarian (AV).
- Weaning should always be completed for 1 stock /strain before starting on another.
- Mice and rats are to be weaned between the ages of 18 to 22 days, unless they are too small/naive to be weaned as may be the case for some inbred strains. They should be fit and in good health, with eyes open, ears up and able to move easily around the cage.
- Information such as breeder details, mating date, birth date and weaning date should be recorded on the breeding cage card.

Retiring:

- The timely retirement of permanent breeding groups is important to ensure peak production within the breeding colonies by the removal of all animals that are no longer breeding effectively.
- Breeders should be retired around 8-10 months of age or after breeding for 6-9 months.

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- Breeders should be retired if they are sick or injured to a degree that renders them unlikely to recover. Examples include overgrown teeth, major fight wounds, open or festering sores, tumors (or abscesses) or animals that are moribund and dehydrated.
- Breeders should be retired if they have poor breeding performance: no litters dropped within 8 weeks of breeding, low pup numbers, cannibalized or fail to nurse pups.
- Breeders should be retired if they produce any pups that are phenotypically different from expected strain or stock characteristics.
- Retired breeders should be culled unless they are required to be used for experiments. Ex-breeder male mice should be housed individually to prevent them from fighting.

Paragraph 10 and 14 - Pain/Distress Classification

Pain/Distress Classification C: Animals upon which teaching, research, experiments, or tests will be conducted, involving no, minimal or momentary pain and/or distress.

Examples:


- Procedures performed correctly by trained personnel such as the administration of fluids, blood collection from a superficial peripheral vessel using standard veterinary practices (mouse – tail vein, rabbit – central artery), standard radiography and parenteral injections of non-irritating substances.
- Euthanasia performed in accordance with the recommendations of the most recent AVMA Guidelines on Euthanasia, utilizing procedures that produce rapid unconsciousness and subsequent humane death.
- Manual restraint that is no longer than would be required (i.e. in minutes) for simple examination

Pain/Distress Classification D: Animals upon which experimental, teaching, research or surgical tests will be performed, involving accompanying pain or distress to the animal and for which appropriate anesthetic, analgesic or tranquilizing drugs will be given - i.e. adequate pain relief is administered to the animals)

Examples:

- Surgical procedures conducted by trained personnel in accordance with standard veterinary practices, such as biopsies, exposure of blood vessels, chronic catheter implantation, laparotomy with the provision of adequate pain relief.
- Blood collection by intra-cardiac and peri-orbital collection under general anesthesia.
- Administration of drugs, chemicals, toxins or organisms that would be expected to produce pain or distress but which will be alleviated by analgesics.

Pain/Distress Classification E: Animals upon which teaching, experiments, research, surgery or tests will be conducted, involving accompanying pain or distress to the animals and for which the

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use of appropriate anesthetics, analgesics or tranquilizing drugs will adversely affect the procedures, results, or interpretation of the teaching, research, experiments, surgery or tests, and are therefore not administered – i.e. pain /distress in the animals is not relieved.

Examples:

- Procedures producing pain or distress unrelieved by analgesics such as toxicity studies, microbial virulence testing, radiation sickness, and research on stress, shock and pain.
- Surgical and post-surgical sequences following invasion of body cavities, orthopedic procedures, dentistry or other hard or soft tissue damage that produces unrelieved pain or distress.