



University of Maryland College Park Animal Care and Use Policy

Guidelines for Breeding Mice

Sexual maturity is reached in mice between 40-60 days of age, depending on the strain. Recommended age at first breeding is no younger than 6-8 weeks of age.

Recommended age for breeding retirement is 8-12 months of age.

When setting up breeding cages, whether for single mating or harem, move the female(s) to the male's cage, not vice versa. Female mice can be more territorial than males and putting a male into a female's cage can cause her to become aggressive and/or refuse to mate. We recommend no more than 2 females per harem cage but 3 per cage is acceptable. Having fewer females per cage simplifies management once they are pregnant and give birth.

If breeding more than one female per cage, leave the females with the male for 10-14 days (about 2 estrous cycles), or until an experienced individual can detect that they are pregnant. Then separate the females into individual cages for the rest of the gestation period and parturition. Two to three bred females may be housed together until pregnancy is confirmed in any or all of them (about day 12-14 post breeding). Once pregnancy is noted, each female should be placed in her own cage and given nesting material. Be sure to indicate on the cage card that these are potentially pregnant females. The male or a non-breeding female may remain with one of the breeding females.

If pair breeding, the sire may be left in the cage.

Should time-pregnancies be required, the female(s) will be placed in the male's cage on the morning of day 1. The timing of the separation of the females from the male will depend on the specific experimental needs. If the timing of the pregnancies needs to be known to the day (24 hr. period), the females should be separated from the male on the morning of day 2. The females can be checked for the presence of a copulatory plug, although the absence of one does not ensure that breeding did not occur and the presence of one does not ensure that fertilization occurred.

Cages containing new litters should not be disturbed for 3-4 days after the pups have been born. The box may be opened for food to be added, dead pups to be removed, injured/sick animals to be examined and the mother's overall condition to be checked by observation. Avoid disturbing the "nest" for these 3-4 days postpartum.

Attempt to keep the room quiet, avoid bringing in any new mice and avoid performing animal procedures of any kind on any other mice in the room, as stress pheromones could be upsetting to the new mothers.

Skip the next litter change. At the next cage change (7-10 days after birth) a litter box scoop may be used to move the nest and litter together to the clean cage with little disturbance.

At this age, pups are becoming more active and are most likely to escape through the water holes in the suspended caging. Pups will generally begin eating solid food and drinking water at 2 weeks of age. Thus, Hydrogel and nutritional supplement (optional, as per PI) should be placed at cage level

for the pups starting at around 12-14 days of age. Hydrogel and supplements will be checked each day during the usual health check and removed and replaced if soiled by feces or urine.

Pups will be weaned between 21 and 28 days, depending on their overall body size. Pups will be separated by sex and placed in cages depending on the capacity of the cage, usually no more than 4 per cage. Hydrogel and supplements such as moistened feed will be offered at weaning and for 7 days afterward to help support the weaned mice during the stress of weaning. Hydrogel and supplements will be checked each day during the usual health check and removed and replaced if soiled by feces or urine.