

**Arizona State University
Institutional Animal Care and Use Committee
STANDARD INSTITUTIONAL GUIDELINE**

SINGLE HOUSING OF MICE AND RATS

This Standard Institutional Guideline (SIG) provides guidance on (1) what are inherently allowable non-experimental reasons to single-house mice and rats, (2) what information is required in an IACUC protocol to house mice or rats singly for experimental reasons, and (3) housing considerations for single-housed rodents

1. Allowable non-experimental reasons to house mice and rats singly
 - a. Mice and rats can be housed singly for the following non-experimentally based reasons without the need to identify them in an IACUC protocol:
 - i. Breeder male being housed in between pairing efforts;
 - ii. Females that have been isolated in anticipation of an imminent birth or for a hiatus between breedings;
 - iii. Lone weanling of a given sex;
 - iv. Individual that is incompatible with conspecifics (e.g., co-housing has led to fighting or excessive barbering);
 - v. Health case where the veterinary team prescribes isolation;
 - vi. Arrival of an uneven number of animals per shipping crate;
 - vii. Attrition of cagemates due to expected research use, some individuals reaching an early endpoint, use in the sentinel program, or unexpected mortality;
 - viii. Other non-experimental reasons with prior approval from the Attending Veterinarian.
2. Experimentally-based reasons for singly housing mice or rats
 - a. It is understood that there are some circumstances related to the experimental needs of the research that require mice or rats be singly housed. Common reasons include but are not limited to:
 - i. Need to measure food intake and/or fecal output;
 - ii. Post-surgically to avoid having cagemates damage incision lines or protruding devices;
 - iii. Control animals for studies that examine social interactions.
 - b. Regardless of the reason, experimentally based single housing must be described in the IACUC protocol to include:
 - i. Scientific justification for needing to singly house animals
 - ii. Maximum duration that the animals will be singly housed
 - iii. Whether or not the DACT standard enrichment enhancement (see below) will be used. If not, rationale for using alternative enrichment enhancement or for not being able to use any enrichment enhancement must be included in the protocol.
3. Housing considerations for single-housed mice and rats
 - a. Singly housed mice and rats must have on their cage card a green sticker that indicates that the cage contains a single housed rodent and the code on the sticker identifies the reason for single housing. Stickers are available in the animal holding room where the extra cage cards and other stickers are kept. A list of the codes used on the stickers is posted within the relevant animal holding rooms. The sticker should be adhered to the primary cage card at the

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time the animal is separated for single housing. This may be done by either DACT staff or researchers.

- b. Codes used on stickers:
 - i. **MB**: Male breeder (a sticker is not required if the cage already has a pink breeder card, but if the male has been moved from a breeding cage and only has a normal white cage card, then a sticker is required)
 - ii. **FB**: Female breeder (however, a sticker is not required if the cage already has a pink breeder card)
 - iii. **SI**: Socially incompatible
 - iv. **Sx**: Post-surgical
 - v. **Tx**: Medical treatment
 - vi. **NP**: No partner due to weaning, attrition, arrival numbers, etc. (however, a sticker is not required for sentinel cages that house only a single animal)
 - vii. **OR**: Other non-experimental reason
 - viii. **Ex**: Other experimental reason approved in the protocol
 - ix. If the protocol has an exception that single housed rodents should not receive additional enrichment, then a minus sign is added to the sticker. Example: **Ex-**, **SI-**, **Sx-**.
- c. Single housed mice and rats must be provided additional enrichment beyond that provided to group-housed cages.
 - i. For mice, the DACT standard is to include a paper souffle cup or wooden ice cream spoon in the cage.
 - ii. For rats, the DACT standard is to include a nylon bone.
 - iii. Alternative enrichment enhancement can be used but requires description in the IACUC protocol or advanced approval from the Attending Veterinarian.
 - iv. Enrichment should be added to the cage at the time the animal is separated for single housing
 - v. If experimental considerations prohibit the use of enrichment enhancements for singly housed animals, the reason for this must be justified in the IACUC protocol.