

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

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Summary of Exceptions to the regulations and standards:

1. Non-standard housing/husbandry

- a. Regulation: 3.126 Facilities, indoor. (a) *Ambient temperatures.*
Regulation: 3.131 Sanitation (a) *Cleaning of enclosures.*
- b. Description: Gnotobiotic piglets will be housed in sterile isolators in rooms maintained at 90°F to prevent hypothermia. The elevated temperature is needed because newborn piglets are unable to regulate their body temperature. The isolator units are required to protect the gnotobiotic piglets from external microbes and to protect personnel from the infectious agents that the piglets are inoculated with. Isolator units (including caging) are cleaned and sanitized following removal of piglets. Piglets will be housed within an individual cage or isolator bay for no more than 2 weeks. Thus, sanitization will occur at 2-week intervals. Daily cleaning of isolator units and caging is limited by the fact that these are sealed units designed to protect piglets from external pathogens and to protect personnel from pathogens being utilized within the isolators. In an effort to minimize waste build-up, isolator units and caging are constructed such that waste falls through the grated flooring; trays underneath caging is emptied twice daily; and food bowls in both caging and isolator bays are emptied and wiped out if milk remains at feeding time.
- c. Species: Swine Number: 76

2. Multiple major operative procedures

- a. Regulation: 2.31 (d)(1)(x)) No animal is used in more than one "major operative procedure" from which it is allowed to recover
- b. Description: Embryos are harvested from sheep models of ALS and Sialidosis to develop CRISPR technologies. Oocytes and embryos are surgically harvested from donor ewes. This protocol includes only implantation of normal unedited embryos. Gamete harvesting will involve a minimally invasive laparoscopic procedure that will be

performed no more frequently than every 3 months. Collection of embryos will require ventral midline incision. Ewes will undergo a maximum of two survival ventral midline surgeries with a 6-month rest period in between surgeries. Multiple surgeries in a single animal are requested to 1) reduce animal use as described in the three R's. 2) Minimize genetic variability compared to sheep in the general population. 3) Account for the fewer normal (non-Tay-Sachs disease carrier) sheep available in the Tay-Sachs flock.

c. Species: Sheep Number: 24

3. Non-standard housing/husbandry

- a. Regulation: 3.126 Facilities, indoor. (a) *Ambient temperatures.*
- b. Description: Gnotobiotic piglets may be housed in rooms with the room temperature may need to be increase for neonatal piglets that are hand-reared. Room temperatures up to 90°F during the first few weeks of life. Elevated temperatures are required for piglets to regulate their body temperature. As an alternative to elevating the temperature of the entire room, piglets may be provided with a warming light.
- c. Species: Swine Number: 2

4. Non-standard housing, sanitation

- a. Regulation: 3.128 Space requirements
Regulation: 3.131 Sanitation.
- b. Description: White footed mice are gregarious, particularly during the winter months, and our experience suggests that keeping 4-6 mice (one male, several females) in a shoebox cage or 12-18 mice of mixed sex allows for sufficient breeding with intrinsic regulation of the numbers of offspring produced. In this manner, we produce only enough for adequate turnover of the colony, but do not experience breeding that needs frequent culling. Although a 1:3 ratio of males to females is optimal, having nondominant males within the cage does not affect breeding. Fighting is minimal among males. In addition, we find that cleaning cages less frequently (one cage change every 2-3 weeks) enhances breeding, probably because of pheromone marking of the cage. Finally, although gravid females could be separated, we have found that such litters survive less frequently than do those allowed to remain with the other mice. The colony has been maintained differently and very successfully with no need to introduce new field-derived individuals.
- c. Species: Wild Mice/*Peromyscus* Number: 474