

Rodent Quarantine

Purpose

The intent of this Standard Operating Procedure (SOP) is to describe quarantine procedures for rodents coming from non-commercial or unapproved sources (see definition in section 3) for laboratory animals housed in Charles Sturt University designated animal holding facilities

Responsibility

Animal care staff, import coordinator, facility manager or supervisor, veterinary care staff, principal investigator (PI) and their staff.

Definition

Non-approved sources are all rodent suppliers other than Monash Animal Research Platform (<http://mas.monash.edu/masax>), Animal Research Service (<http://www.arc.wa.gov.au>) and the animal production division of the Jackson Laboratories USA (<http://jaxmice.jax.org>) or other approved sources (see Facility Manager for guidance).

Transfer of animals between Animal Holding Facilities of the same containment status (see SOP038 – Animal Transportation) do not need to be quarantined providing recent health status reports are available for the receiving facility.

Procedure

1. The PI requesting the animals must submit a completed Import Request form to the Facility Manager for approval.
2. The sending institution provides the Facility Manager and PI with the following information:
 - a. A recent (<3 months) health report of the colony.
 - b. A Mouse / Rat Health Information form containing:
 - i. A summary of health issues for the last 12 months, for the whole facility
 - ii. A description of the husbandry practices (sterile or non-sterile, micro-isolation, use of change station, etc.)
 - iii. A description of the health monitoring program
3. Facility Manager's responsibilities:
 - a. Evaluate the information provided by the source institution.
 - b. If necessary, consult with the PI to determine whether the mice will be received for quarantine.
 - c. Notify the PI and import coordinator of the decision on quarantine housing for each quarantine request.
 - d. Notify the import coordinator of any special screening procedures for groups of animals (e.g. special instructions if mice are immunodeficient, genetically modified in such a way that might affect their immunological status or infected with a known pathogen).
 - e. Determine whether or not tests are necessary and if testing should follow the standard SOP and whether any additional tests are required. This is determined according to the requirements of the destination facility.
4. Quarantine Access:
 - a. Only essential personnel have access to quarantine animals (i.e., the import coordinator or PI, facility supervisor, facilities manager, animal care staff or veterinary care staff).
 - b. If research personnel require access to the quarantine room, contact the import coordinator / facility manager for permission and instructions on entering the room. A quarantine room induction must be carried out with the facility supervisor or other nominated, trained individual prior to entry to the quarantine room or facility.
5. Rodents must not be transferred out of quarantine before the end of the designated quarantine period unless the transfer has been approved by a qualified veterinarian.

6. Breeding Rodents in Quarantine:
 - a. Breeding in quarantine is encouraged since pups can be good indicators of potential health problems and are valuable for testing but should be limited to only those animals required for experimental or testing purposes or for propagation of the line.
 - b. If space is limited due to large animal numbers in quarantine, the import coordinator notifies researchers that they may need to limit breeding to the most essential lines and needs. The facility supervisor is also notified of any space requirements. Breeding can also be timed so that litters are at weaning age at the estimated time of transfer to non-quarantine containment.
7. Husbandry:
 - a. Operate quarantine facilities under Biosafety level 2, Bioexclusion level 3 practices.
8. Observation and Special Care:
 - a. Observe animals at least once daily.
 - b. Report animals with clinical signs to the veterinary care staff, PI and Facility manager.
 - c. If deaths occur, store the carcasses in the designated refrigerator and inform veterinary care staff, PI and Facility Manager.
 - d. For unexplained morbidity/mortality, collect blood when possible (for serology), perform gross necropsy and collect tissues for histopathology via normal submission through the VDL or other recognised veterinary pathology facility.
9. Sentinels:
 - a. The import coordinator must provide a minimum 2 ovariectomised out-bred females (CD-1, SW, ICR, Wistar) from an appropriate SPF (see above) source as contact sentinels for each separate shipment housed in quarantine (up to a maximum of 70 cages). Surgical clips are removed 7 to 10 days after surgery date.
 - b. If more than one distinct strain is included in one shipment, order a minimum of 2 contact sentinels per strain.
 - c. If the imported animals have white coats, ear punch the sentinels before placing them in the cage. Record sentinel IDs on the cage card.
 - d. Place the contact sentinels each in a separate cage in direct contact with the imported animals. Identify the cages containing the contact sentinels and indicate the date they were added.
 - e. If more than two cages are used to house the shipment, transfer approximately one teaspoon of soiled bedding from every cage to the cages housing the sentinels at least once a week during cage change as per Sentinel management SOP.
10. Special recommendations for immunodeficient animals:
 - a. Do not place sentinels in direct contact with the source animals unless they share the exact same health status (including *Pneumocystis carinii*) as the immunodeficient animals. This step is a precaution to prevent possible transmission of pathogens from the sentinels to the population.
 - b. Each week, transfer soiled bedding from the cages of the immunocompromised source animals to the sentinel cage.
 - c. Submit the indirect contact sentinels and samples as described above.
 - d. To determine *Pneumocystis carinii* status, submit the lungs of two immunodeficient weanlings for PCR to Cerberus Sciences, Adelaide.
11. Testing:
 - a. Parasitology: fresh faeces from each imported cage are pooled per strain for flotation. Acetate tape tests are taken from 2 imported animals per cage.
 - b. Pasteurella: oral swabs are taken from 4 to 8 imported animals per strain. Oral swabs can also be pooled from each cage.
 - c. After 5 weeks of exposure of sentinels to imported population, test sentinels as determined by the veterinarian or Facility manager.
 - d. Once the sentinels have been removed, treat the remaining animals preventatively for external and internal parasites in the following manner:
 - i. Treat 50% of the animals with ivermectin 0.008 mg/mL in the drinking water (i.e., mix 1 volume of ivermectin sheep drench 0.08% with 99 volumes of water).
 - ii. If after 3 days no adverse reaction has been seen with the first half under treatment, place the second half of the animals on ivermectin medicated water as described above.
 - iii. Maintain treatment for 7 days.
 - iv. Discontinue treatment for the next 7 days.
 - v. If animals were imported from a clean source without any history of endo or ectoparasites, one treatment is sufficient. If parasitology test results are positive, 5 to 7 treatment cycles may be necessary as determined by the veterinarian or designate.
12. Outcome and follow up:
 - a. Ensure a veterinarian (or appropriately trained designate) interprets the results.

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- b. Proceed with one of the following options depending upon the results for each group of quarantine animals and the instructions from a veterinarian (or designate):
- i. Transfer the animals to an animal facility with the corresponding health status (refer to the excluded pathogens lists).
 - ii. Begin a rederivation process.
 - iii. Hold the animals in quarantine for an extended period, if space is available in consultation with the facility supervisor.
 - iv. Euthanise the animals once rederivation is complete

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