

Standard operasjonsprosedyre: Håndtering av immunsvakedyr

SOP nr: 5-07

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HANDLING IMMUNOCOMPROMISED ANIMALS

1.0 PURPOSE

- 1.1 To provide an overview of how immunocompromised animals differ from other animals at KPM.
- 1.2 To spread information about the correct handling of immunocompromised animals in order to prevent the transmission of microorganisms to the animals and the environment.
- 1.3 To prevent unnecessary death and disease amongst immunocompromised animals due to incorrect handling.

2.0 DIVISION OF RESPONSIBILITY

- 2.1 KPM users are responsible for familiarising themselves with the strain of mice they are working on and with the measures necessary for keeping the mice healthy.
- 2.2 KPM users are responsible for tending their own animals in cases where complications are expected or have already arisen.
- 2.3 The PMSK is responsible for informing the room manager if immunocompromised animals have been ordered for a room where this type of animal has not previously been housed.
- 2.4 Everyone who handles immunocompromised animals is responsible for following the routines and rules governing the handling of such animals at all times.
- 2.5 KPM is responsible for making sure that appropriate equipment, such as autoclaved cages, gloves and disinfectants, are readily accessible to facilitate the handling of immunocompromised animals.
- 2.6 KPM provides training for KPM users in the handling of immunocompromised animals, if the user requests this.
- 2.7 It is the responsibility of both the room manager and the KPM user to make sure that immunocompromised animals are given a red cage card in order to show that these animals require special measures.
- 2.8 The room manager is responsible for making sure that immunocompromised animals are provided with the food and water they need every day, as well as nesting materials and igloos.
- 2.9 The room manager contacts the user group if questions and deviations arise concerning animals and experiments, with a copy to the veterinarian in charge and the PMSK.
- 2.10 The room manager is responsible for ensuring that the cages are always clearly marked with the text "change gloves". This indicates that gloves must be changed before you touch the cage and then again before you touch the animals.



- 2.11 The room manager is responsible for printing out attachment 1 and hanging it in a clearly visible place on the wall of the room where immunocompromised animals are housed.



3.0 PROCEDURE

- 3.1 The normal procedure for changing cages and inspecting animals must be followed, but with the addition of the extra measures described in this SOP, [see our webpage](#) and SOP 5-02 Cage change on IVC racks for a description of the standard procedure.
- 3.2 There are several different kinds of immunocompromised animals, such as “NOD mice” (NSG) and “nude mice” (Foxn1nu). If immunocompromised animals need handling in a different way to that described in this SOP, the recommendations of the supplier should be followed.
- 3.3 “Nude mice” must not be given an igloo, as the igloo can scratch their bare skin; instead, they should be given more nesting material than usual, which will also function as insulation to prevent the mice getting cold.
- 3.4 Immunocompromised animals require additional hygiene procedures in order to prevent them from becoming infected with unwanted microorganisms. All microorganisms, including opportunistic microorganisms, can potentially be pathogens for animals with a weakened immune system.
- 3.5 All immunocompromised animals must be given a red cage card at all times to show that the way they are to be handled deviates from standard procedure. If the animals need cage cards of more than one colour, double cage cards must be used, where the red card is placed behind the main colour, but still clearly visible. See [our webpage](#) and SOP 3-01 Housing of mice and rats for information of the use of coloured cage cards.
- 3.6 In rooms containing immunocompromised animals, these animals should be inspected first and their cages changed before those of the other animals.
- 3.7 A notice as shown in attachment 1 must always be hung on the wall of rooms containing immunocompromised animals. This notice explains how to handle immunocompromised animals in accordance with the supplier’s recommendations.
- 3.8 The cages of immunocompromised animals must be changed once a week and their water bottles must be changed twice a week to prevent the growth of microorganisms.
- 3.9 If the rack is to be disconnected from the ventilation unit, all the cages containing immunocompromised animals must be detached from the rack before the rack is disconnected from the ventilation. When the rack is to be reconnected, the rack must first be connected before the cages are reattached to the rack.
- 3.10 Before placing cages on a work bench or LAF bench, the bench top must be washed and disinfected.
- 3.11 When handling the animals and changing their cages, gloves must be changed “between animals and cages”, in other words before you touch the cage and open the lid, a fresh pair of gloves must be put on before you handle the animals. Then after handling the animals, change to a fresh pair of gloves before closing the lid of the cage.
- 3.12 In rooms where the gloves have not been sterilised before use (autoclaved or gassed), new gloves must be disinfected with ethanol before you handle the animals. In room DU044 and inside the barrier all gloves has been gassed.

- 3.13 Before handling other animals on the same rack as immunocompromised animals, you must change your gloves and wash and disinfect the bench top.
- 3.14 Once you have finished handling animals on the LAF bench, you must clean the bench with soap and disinfect it with Prochlor or Virkon. Remember to put on protective glasses before using Prochlor/Virkon.
- 3.15 When handling animals as part of an experimental procedure, this should preferably be done in one and the same cage as far as possible, using either the cage the mouse came from, or a new, clean cage. If the mouse is to be removed from the cage, for example for anaesthetising, use clean, blue paper and disinfect surfaces with ethanol. NB: do not spray the anaesthesia chamber with ethanol, as ethanol destroys the material in the chamber.
- 3.16 Immunocompromised animals must be unpacked immediately after arrival and in accordance with the procedure described in SOP 7-01 Importation of animals to the MDU, Barrier, KPME and conventional unit (link to [our webpage](#)).

4.0 HEALTH, SAFETY AND THE ENVIRONMENT

- 4.1 Everyone must have undergone adequate training to ensure the proper use of clothing and protective equipment.
- 4.2 Everyone must have undergone adequate training to ensure that animals are handled in the correct way.
- 4.3 Work must be carried out on a ventilated bench or LAF bench to minimise exposure to allergens and pathogens and to limit the spread of these to the surrounding environment.

Kemetyl teknisk etanol 96%	CAS nr.	Piktogram	Faresetninger	Sikkerhetssetninger
Etanol	64-17-5	 	H225 Meget brannfarlig væske og damp H319 Forårsaker alvorlig øyeirritasjon	P210 Holdes vekk fra varme, varme overflater, gnister, åpen ild og andre antenneskilder. Røyking forbudt. P370 + P378 I tilfelle brann: Slukk med karbondioksid (CO ₂), skum, pulver eller vann.

Contec Prochlor	CAS nr.	Faresetninger	Førstehjelpstiltak

Calcium Hypochlorite	7778-54-3	H272; Kan intensivere brann; oksidant H302; Farlig ved svelging H314; Forårsaker alvorlige hudforbrenninger og øyeskader H400; Veldig giftig for vannlevende liv EUH031 Kontakt med syrer frigjør giftig gass	Hudkontakt: Vask straks med store mengder såpe og vann. Øyekontakt: Skyll øyet under rennende vann i 15 minutter. Kontakt lege. Svelging: Skyll munnen med vann. Innånding: Gå ut i frisk luft etter tilfeldig inhalering av damper. Kontakt lege.
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5.0 EQUIPMENT AND MAINTENANCE

- 5.1 Autoclaved water
- 5.2 Autoclaved food and environmental enrichment
- 5.3 Gloves
- 5.4 Soapy water
- 5.5 Ethanol
- 5.6 Prochlor
- 5.7 Paper towels

6.0 HISTORY OF EDITING

- 6.1 Translated to English by Deborah Arnfinsen January 2023

7.0 REFERENCES

- 7.1

Vedlegg 1 (Engelsk utgave):

Handling of NSG mice in KPM

General information

- Housing always in individually ventilated cages designed to minimize the spread of airborne particles between cages.
- Change cages weekly to prevent the accumulation of commensal organisms that might infect NSG.
- Change water 2 times a week.

Handling techniques

1. If there are immunocompromised animals on the rack, these cages should be disconnected from ventilation by careful loosen the cage before disconnecting the rack. These should be put back in place after the rack is reconnected.
2. Immunocompromised animals are changed first.
3. Change cages under a laminar flow hood.
4. Disinfect laminar flow hood before use.
5. The cages are "dirty" on the outside, so gloves must be changed after the lid is opened and before touching the animals.
6. Handle mice with gloved hands that have been sanitized with ethanol.
7. Change gloves before the lid of the new cage is closed.
8. Disinfect the hood in between changes with 70% ethanol.
9. The bench is washed with soapy water and disinfected with 70% ethanol before changing the rest of the cages on the rack.

10. Dirty equipment should be sent to the wash hall.

Vedlegg 2 (Norsk utgave):

Håndtering av NSG mus i KPM

Generell informasjon

- NSG mus oppstalles alltid i individuelt ventilerte bur som minimerer spredningen av luftbårne partikler mellom burene.
- Skift burene ukentlig for å forhindre akkumulering av kommensale organismer som kan infisere NSG.
- Skift vannet to ganger i uken.

Håndteringsteknikker

1. Hvis det finnes immunkomprimerte dyr på racken, skal deres bur frakobles ventilasjonen ved forsiktig å løsne buret, før racken frakobles. Disse burene skal settes tilbake på plass etter at racken er koblet til igjen.
2. Skift immunkomprimerte dyr først.
3. Skift bur under en laminær strømningshette.
4. Desinfiser den laminære strømningshetten før bruk.
5. Burene er «urene» på utsiden - skift derfor til rene hansker etter at du har åpnet lokket og før du berører dyrene.
6. Håndter mus med hansker som er desinfisert med etanol.
7. Bytt hansker før du lukker lokket på det nye buret.
8. Desinfiser hetten mellom burskift med 70% etanol.
9. Vask benken med såpevann og desinfiser den med 70% etanol, før du skifter de øvrige burene på racken.

10. Skittent utstyr skal sendes til vaskehallen.