

Standard operasjonsprosedyre: Import av dyr til MDU

SOP nr: 7-01

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IMPORTATION OF ANIMALS TO THE MDU, BARRIER, KPME AND CONVENTIONAL UNIT

1.0 PURPOSE

- 1.1 To prevent the invasion and spread of agents when importing animals to the MDU.
- 1.2 To ensure that the information accompanying the animals is correct from the time of their arrival and until they are housed in cages in the animal room.
- 1.3 To make sure that all KPM employees are familiar with the handling and hygiene procedure governing the unpacking of animals.

2.0 DIVISION OF RESPONSIBILITY

- 2.1 Personnel with special screening responsibility (PMSK) have prime responsibility for ordering animals and for making sure that the animals meet the health status requirements for importation to the MDU, Barrier and KPMe (see appendix 2).
- 2.2 The PMSK must ensure that suppliers are given all the information they need for the delivery of animals, including the Animal reception mobile phone (from now on named **AR-Phone**) to ring on delivery.
- 2.3 The KPM user registers the order in SL (Science Linker) and contacts the PMSK if he/she has any queries.
- 2.4 The PMSK updates SL with the order of animals, order number and date of arrival.
- 2.5 The PMSK informs all the room managers by email which animals are due for delivery during that particular week, the date of delivery and the rooms in which the animals are to be housed.
- 2.6 The operating coordinator updates the weekly overview showing which animals are due for delivery on which date, the room to be used and the name of the appropriate user group.
- 2.7 The operating coordinator is responsible for delegating the task of receiving the animals to another KPM employee if the PMSK is not present on the day of delivery.
- 2.8 The PMSK is responsible for making sure that the AR-phone is available and ready charged on animal delivery days.
- 2.9 The supplier must ring to the AR-phone on arrival and make sure that he has brought all the necessary documentation with him. The person in charge of receiving animals must be available by telephone throughout the day when animals are scheduled for delivery.
- 2.10 The person in charge of receiving the animals must disinfect the transport carton(s) with Virkon and check that the carton(s) comply with the order in SL.



- 2.11 The person in charge of receiving the animals must mark the transport cartons with the appropriate room number.
- 2.12 The person in charge of receiving the animals must inform the room manager when the animals arrived and when the cartons were disinfected.
- 2.13 The room manager is responsible for fetching the carton and for unpacking the animals according to the correct procedure.
- 2.14 The room manager for the Barrier and DU-044 is responsible for coordinating the collection of animals from employees working in the MDU and for moving animals from DU-007 to the clean corridor.
- 2.15 KPM is responsible for ensuring that new employees are thoroughly trained before they are given the task of receiving animals.

3.0 PROCEDURE

- 3.1 This SOP (SOP 7-01) is divided into the following parts: «Transport to the Barrier», «Transport to the MDU», «Transport to KPM» and «Unpacking Animals».
- 3.2 Animals to be imported to the MDU or the Barrier must have either SPF or SOPF status. In rooms such as DU-036 and DU-044, all animals must have SOPF status. The health status of animals for importation to KPM must comply with the requirements set out in the table in appendix 2.
- 3.3 Apart from certain exceptions, animals are delivered on Tuesdays and Thursdays. If animals are due to arrive on other days of the week, the PMSK must inform all employees of this by email.
- 3.4 The person in charge of receiving the animals must ensure that a sufficient amount of ready-mixed Virkon is available on the dirty side of DU-007. The Virkon solution must not be more than five days old and must be remixed if it has lost its red colour. Use one tablet to 500ml of water and allow to stand for 5 minutes to mix to a 1% Virkon solution.
- 3.5 The supplier contacts the person in charge of receiving the animals by calling the AR-phone so that he/she can receive the animals, check that the animals are addressed to KPM and that the number of cartons complies with the order.
- 3.6 The cartons must be placed on the dirty side of the benchtop in DU-007 and must immediately be sprayed with 1% Virkon solution. The Virkon solution must be allowed to work for a minimum of 15 minutes. When disinfecting the cartons, a full face mask with a vapour filter or a face mask with protective glasses must be worn.
- 3.7 The delivered cartons must be checked to ensure that they comply with Science Linker (SL). Check that the order number, the number of animals and their gender, date of birth and strain name are correct.
- 3.8 The person in charge of receiving the animals clearly marks the cartons with the appropriate room number and carefully checks which unit the animals are destined for: the Barrier, DU-044, the MDU or KPM. Only animals with a documented health status and delivered from an approved supplier can be imported to the MDU.
- 3.9 The person in charge of receiving the animals informs the room manager either by email or telephone that the animals have arrived and when the cartons were sprayed.
- 3.10 File the documentation from the supplier showing the animals' health status. Check that the cartons comply with the information in SL.

- 3.11 The animals should be unpacked as soon as possible but can remain in the cartons until the following day if they arrive late. Consult the PMSK on whether the animals can be unpacked on the following day. The PMSK ascertains how long the animals have been in transport.

Transport of animals to the Barrier and DU-044 (SOPF status)

- 3.12 Animals to be imported to the Barrier or DU-044 must be free of agents that can cause opportunistic infections, see the microorganisms (viruses, bacteria, fungi, parasites) in the FELASA list below (appendix 2). The animals must have SOPF status for rooms DU-044 and DU-036. The animals arriving to DU-041 can either have SPF or SOPF status.
- 3.13 Before entering the Barrier, the room manager must turn on the gas sluice machine using the grey button. NB! The gas cycle must not be run shortly before the animals are placed in the chamber. If the chamber needs gassing before animals are placed there, the gassing must be carried out on the preceding day.
- 3.14 The room manager for DU-044 and the Barrier cannot enter DU-007 to fetch animals – this task must therefore be coordinated with other KPM staff members.
- 3.15 The member of staff charged with collecting animals from DU-007 must fetch a clean trolley from the clean corridor and spray the trolley with ethanol or Virkon before the animals are placed on it.
- 3.16 Use two pairs of gloves and discard the outer pair after handling the cartons.
- 3.17 The cartons must be transported via the clean corridor and be placed either in the gas sluice (in the case of animals destined for the Barrier) or outside DU-044 (animals destined for DU-044).
- 3.18 The cartons must be sprayed once again with the Virkon located in the clean corridor and the Virkon must be allowed to work for at least 10 minutes before the cartons are taken into DU-044 or the Barrier. The room manager receiving the animals is responsible for making sure that red Virkon is available in the clean corridor before the animals arrive.
- 3.19 The member of staff transporting the animals informs the room manager that the animals are ready to be unpacked. The room manager unpacks the animals, following the procedure set out in points 3.37 – 3.48 below.
- 3.20 Animals going to DU-041 may have SPF status and are therefore considered to have lower status than the animals that are on DU-036 and DU-044, follow [SOP 5-04 Work in the Barrier](#). Animals should be unpacked in ordinary IVC cages.
- 3.21 All animals destined for **importation to DU-036** must be housed in the Barrier in ISO cages. The ISO cages must maintain a negative pressure and the animals must remain in quarantine for two weeks before they can be transferred to IVC cages. This is a precaution in case any infections are discovered at the supplier's after the animals have been imported to KPM.
- 3.22 **NB! when using an ISO rack:** Make sure that all the cages are properly connected to the rack's ventilation system! Check that the negative pressure in the cages is at the correct level (-75 kPa). Mark the cages with «Quarantine until xxxx» (the date 14 days after arrival). Print and hang the «Daily inspection of the ISO rack» (appendix 3) in a clearly visible place by the ISO rack.
- 3.23 Refer to appendix 3 for how to open and close ISO cages. For unpacking the animals, follow the procedure set out in points 3.37-3.48 below.

Transport of animals to the MDU

- 3.24 All animals destined for the MDU must have SOPF or SPF health status.
- 3.25 The room manager fetches a trolley either from the dirty corridor or from the clean corridor and disinfects it with 70% ethanol.
- 3.26 Take the trolley to DU-007 and put on two pairs of gloves. Move the cartons containing the animals marked with your room number from the benchtop and onto the trolley. Discard the outer pair of gloves after handling the cartons.
- 3.27 Check that the order number and number of mice on the carton agree with the order.
- 3.28 Take the trolley with the carton(s) through the dirty corridor via the air shower to the appropriate room.
- 3.29 Check on Science Linker that the information on the carton(s) is correct with regard to the number of animals, their gender and strain. When unpacking the animals, follow the procedure set out in points 3.37 – 3.48 below.

Transport of animals to KPMe and Conventional unit

- 3.30 The room manager for KPMe cannot enter MDU, DU-006 or DU-007 after being in KPMe/Conventional unit (see [SOP 1-01 Quarantine rules](#))
- 3.31 The room manager must fetch a trolley from MDU and send it out via DU-006 (NB: use the Crocs available on the inside of DU-006 if you need to enter from MDU). The trolley can then be picked up on the other side of DU-006 and pushed to DU-007 and placed there either on the day the animals arrive or on the preceding day.
- 3.32 The room manager for KPMe uses a clean trolley for transporting the carton(s) from DU-007 to the KPMe sluice. The carton(s) must be disinfected with Virkon in the sluice. When disinfection of the carton(s) is complete, the room manager can go to the cloakroom to change before entering KPMe to fetch the carton(s) on the other side of the sluice and deliver them to the animal room.
- 3.33 To transport animals to the Conventional Unit, the animals must be transported to the back of the conventional unit and placed inside the quarantine room. Here, the cages must be sprayed with Vircon before being brought into the department.
- 3.34 The room manager unpacks the animals, following the procedure described in points 3.37 – 3.48 below.
- 3.35 Once the room manager has finished unpacking the animals in KPMe, the refuse bags and carton must be taken out via the sluice and put into the containers standing outside DU-006/DU-007. Use gloves when handling the bags and discard gloves before touching door handles and the like. Bags and cartons should preferably be taken to the containers using the trolley.
- 3.36 The trolley **can not** return to DU-007 or DU-006 after use. The trolley may be placed inside KPMe, conventional unit or inside the autoclave room inside the conventional unit.

Unpacking animals



- 3.37 When the animals arrive at the room where they are to be unpacked, cages should preferably have been prepared in advance. The cages must contain a sufficient amount of food and water, nesting

material, litter and an igloo. Information regarding any exceptions to this standard content will be given in the details of the order in SL.

- 3.38 The LAF bench must be cleaned and disinfected before use and is then designated as a clean zone. The trolley carrying the cages is designated as a dirty zone. The trolley should be positioned near the LAF bench so that the mice are carried over as short a distance as possible.
- 3.39 The outer pair of gloves (usually blue) must be changed after every handling of animals or carton(s).
- 3.40 Put on a pair of blue gloves. Position the open cages on the LAF bench. Open the carton and make sure you keep close to the carton so that the animals do not climb out. If you have to leave the animals, make sure you close the carton first.
- 3.41 Put on a fresh pair of blue gloves before you handle the animals. You should preferably transport the animal on top of or inside your palm, or inside a tunnel, to make the animal feel safe and also take hold of its tail in case it tries to jump. Keep a count of the animals as you unpack them, noting any injuries or defects. Put a little food and nesting material from the carton into the new cage. Change your gloves each time you open a new carton or handle a new, clean cage.
- 3.42 Any injuries must be documented by taking photos and the photos must be sent to the PMSK. Sick animals that are unlikely to recover quickly must be euthanised.
- 3.43 Check that there are no more animals in the carton before closing it and putting it in a refuse bag.
- 3.44 When all the animals are caged and the cages are on the rack, this must be recorded in SL under the order confirmation. Make sure that all the information regarding the number of animals, the strain (NB: be careful to register the full name of the strain) and the date of birth is correct before you approve the entry. The animals and their cages can then be registered in SL. For the registration of animals in SL, see appendix 1.
- 3.45 The number of animals per cage must not exceed the maximum number permitted. The correct housing of animals is described in "[SOP 3-01 Housing of mice and rats](#)".
- 3.46 The cages with animals arriving from Europe must acclimatization for 7 days, animals imported outside Europe should be acclimatized for 14 days (unless otherwise specified in FOTS). In the case of behavioral experiments, the animals must be acclimatized for 14 days
- 3.47 Clean the bench with soapy water and disinfect it with Prochlor or Virkon. Sweep the floor.
- 3.48 Place refuse bags containing cartons outside the laundry. Put the trolley on the dirty side of the laundry (not KPMc/conventional unit).



4.0 HEALTH, SAFETY AND THE ENVIRONMENT (HSE)

- 4.1 The animals may well be stressed on arrival and should be handled with care.
- 4.2 All members of staff must have undergone sufficient training so that they know how to dress correctly and use the right protective equipment.
- 4.3 All members of staff must have undergone sufficient training so that they know how to handle animals properly.
- 4.4 All staff using chemicals must have undergone sufficient training and have access to the correct protective equipment so that they can handle the chemicals safely.
- 4.5 All staff must be familiar with Eco Archive and the safety data sheets for the chemicals to which they may be exposed.

Kemetyl technical ethanol 96%	CAS no	Pictogram	Hazard statements	Precautionary statements
Ethanol	64-17-5	 	H225 Highly flammable liquid and vapour H319 Causes serious eye irritation	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P370 + P378 In case of fire: Extinguish with carbon dioxide (CO2), foam, powder or water.

Contac Prochlor	CAS no	Hazard statements	First aid
Calcium Hypochlorite	7778-54-3	H272 Oxidiser - may intensify fire H302 Harmful if swallowed H314 Causes severe skin burns and eye damage H400 Very toxic to aquatic life EUH031 Contact with acids will generate toxic gas	Skin contact: Wash immediately with plenty of soap and water. Eye contact: Rinse eye under running water for 15 minutes. Contact a doctor. Ingestion: Rinse mouth with water. Inhalation: Move to fresh air after inhalation of vapours. Contact a doctor.

Rely+ On Virkon	CAS no	Pictogram	Hazard statements	Precautionary statements

Pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8			
Malic acid	6915-15-7			
Sulphamidic acid	5329-14-6			
Sodium dodecylbenzenesulphonate	25155-30-0			
Dipotassium peroxodisulphate	7727-21-1			

H315 Causes skin irritation
 H318 Causes serious eye damage.
 H335 May cause respiratory irritation
 H412 Harmful to aquatic life with long lasting effects.
 EUH208 Contains dipotassium peroxodisulphate. May produce an allergic reaction.

P102 Keep out of the reach of children.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P262 Must not come into contact with the eyes, skin or clothing.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303+P361+P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 IF IN EYES: Rinse carefully with water for several minutes. Remove contact lenses if used and easy to do. Continue rinsing.
 P311 Call a POISON CENTRE or doctor/physician.
 P501 Dispose of contents/container in accordance with local regulations.

5.0 EQUIPMENT AND MAINTENANCE

- 5.1 Clean, autoclaved cages, enrichment, food and water.
- 5.2 Trolley
- 5.3 Gloves and P3 masks
- 5.4 Full face mask with vapour filter/mask with vapour filter and protective glasses

6.0 EDITING HISTORY

- 6.1 02.03.20: SOP 12-003-02 "The reception of animals from a non-approved supplier" integrated into this SOP

6.2 04.03.20: Some of the content edited. The SOP number changed from 12-002-02.

6.3 04.05.22, Helene Tandberg: Content edited. Major changes made and merged with SOP 7-01, 7-02
“Import to the Barrier” and SOP 7-03 “Import to the conventional unit and KPMe”

6.4 03.11.22: Added sentence about arriving animals from outside of Europe. (Helene Tandberg)

6.5 26.06.2023 Revised and added information regarding conventional unit. (Helene Tandberg)

7.0 REFERENCES

7.1 The text in appendix 1 is an extract from the Science Linker «help» menu.

Appendix 1: How to register new animals in Science Linker:

- 1) Select an order and click the "Order->Reception" button. This opens the animal order form with the order details. Click OK to confirm (after any corrections).
- 2) A "New animals" dialog is shown, informing that new animals will now be created on the specified project, and that the animals will be available in the Animal table panel for transfer to cages in a rack. The animals are created when OK is pressed at this step. Please read the instructions in this dialog carefully.
- 3) The project and rack selection dialog is shown with project and rack preselected according to information in the order.
- 4) In the "Animal orders" list, the fields "Received" (date) and user name are filled in. Note that "Non-received order only" is checked by default, so the order line will now normally not be listed unless this checkbox is cleared.
- 5) Depending on the selections at step 2 and 3, the Animal table panel should now normally be open and listing the new received animals, and the "Keywords" field of the animals should contain information from the order form about the cage purpose, cage title, and rack destination. The function "Distribute selected animals from the Animal table into new cages" (available after clicking the "New animals" button) should normally be used to move the animals into cages. This will automatically set cage purpose and cage title using the information from the Keywords field. See: New animals

Pressing the "New animals" button results in the opening of a dialog with 3 buttons:

- 1) Create new animals in the Animal table (skip to step 3 if animals are already created by PMSK and are shown in the animal table)

This button opens a dialog/form which allows entering the number of new animals to create, their sex, species, etc. similar to the animal order dialog (Order animals)

In the form: Checking "Unknown" for Birth date or Expiry date means leave these fields empty in the new Animal records. Arrival age (in days) or arrival weight (in grams) are usually used as alternatives to a known birth date, but may be set also with a known birth date.

When finished, press "OK" or press "Cancel" to abort.

For each new animal one new record will be created in the data table called "Animal".

The new records will be marked. The mark (in this case "x") is used by the system to retrieve the new records in 2) below.

The default setting in this dialog will remove marks from all animals before marking the new ones. The result is that only the new animals will be shown in 2) below.

After pressing OK, the program will move on to 2) below, where the "Search current table" dialog will be skipped - instead automatically searching for animals marked by "x".

(Advanced users: These marks are the same as shown in the "x" column in Table view, meaning that the new records may be retrieved in Table view for advanced processing.)

- 2) Search for and list animals already in the Animal table (if your animals do not appear in animal table, you can use this search function, you can search by order number)

This will open the "Search current table" dialog. If no other search has already been performed, the default is to search for an "x" in the mark field.

Note: If this function is activated automatically after 1) above, then the search dialog will be skipped - instead automatically searching for animals marked by "x", to show only the last created animals.

The search results will be presented in the Animal table:

Alternative ways to move animals into cages from the Animal table:

- Use the "Distribute selected animals from Animals table into new cages" function. See 3) below.
- Select animals in the Animal table and drag them into a cage, or to a free rack position to create a new cage.

- 3) Distribute selected animals from the Animal table into new cages

Select animals in the Animal table and activate this function.

Appendix 2.

Table 1 Pathogen allowance at KPM (mice).

Agent	Conventional and KPMe	MDU	SPF	SOPF
Viruses				
Mouse hepatitis virus	■			
Mouse rotavirus (EDIM)	■			
MNV, murine norovirus	■			
Parvoviruses: -Minute virus of mice -Mouse parvovirus				
Theiler's murine encephalomyelitis virus				
Lymphocytic choriomeningitis virus				
Mouse adenovirus type 1 (FL)				
Mouse adenovirus type 2 (K87)				
Mousepox (ectromelia) virus				
Pneumonia virus of mice				
Reovirus type 3				
Hantaviruses				
Sendai virus				
Lactate-dehydrogenase elevating virus				
Polyomaviruses (mouse polyomavirus, K virus)				
Herpes viruses (mouse cytomegalovirus, mouse thymic virus)				

Bacteria and fungi				
Helicobacter spp (with differentiation to species level if positive: H. hepaticus, billis, typhlonius, ganmani, mastomyrinus, rodentium)	Green	Yellow	Yellow	Red
Rodentobacter heylii (Pasteurella pneumotropica Heyl)	Green	Yellow	Yellow	Red
Rodentobacter pneumotropicus (Pasteurella pneumotropica Jawetz)	Green	Yellow	Yellow	Red
Streptococci b-haemolytic (not group D)	Green	Yellow	Yellow	Red
Streptococcus pneumonia	Green	Yellow	Yellow	Red
Citrobacter rodentium	Green	Yellow	Yellow	Red
Clostridium piliforme	Red	Red	Red	Red
Corynebacterium kutscheri	Green	Yellow	Yellow	Red
Mycoplasma pulmonis	Green	Yellow	Yellow	Red
Salmonella spp.	Red	Red	Red	Red
Streptobacillus moniliformis	Green	Yellow	Yellow	Red
Filobacterium rodentium (Cilia-associated respiratory bacillus)	Green	Yellow	Yellow	Red
Pneumocystis murina	Green	Yellow	Yellow	Red
Pasteurella multocida	Green	Yellow	Yellow	Red
Klebsiella oxytoca	Green	Green	Yellow	Red
Klebsiella pneumonia	Green	Green	Yellow	Red
Pseudomonas aeruginosa	Green	Green	Yellow	Red
Staphylococcus aureus	Green	Green	Yellow	Red

Parasites				
Fur mites (Myobia, Mycoptes, Radfordia)				
Pinworms (Aspicularis, Syphacia) Syphacia muris, Syphiacia obvelata, Aspicularis tetraptera				
Giardia muris				
Spironucleus muris				
Cryptosporidium spp				
Entamoeba muris				
Tritrichomonas muris				

- Exception: dispensation for rederevating on terms

Appendix 3:**Daily inspection of the ISO rack**

- This ISO rack contains potentially infectious animals.
- Handle ISO cages at the end of the working day. Always open the cages using a LAF bench on maximum flow.
- Change the cages if necessary.
- The cages are clean on the outside. Establish a clean and dirty side of the LAF bench. Change your gloves before closing the cage and putting it back on the rack.
- **NB! The cages are to all intents and purposes hermetically sealed. Take extra care to connect the cage to the ventilation on the rack.**
- After use, clean the LAF bench with soapy water and disinfect it with Prochlor.
- There are dedicated bottles belonging to the ISO cages.
- The rack has a higher negative pressure level than that of the IVC racks (from 0 to - 100 kPa). The rack has its own battery which turns on if there is a power cut. The capacity of the battery is ca. 2 hours+.

How to open and close an ISO cage

To open:

1. Disengage the cage from the rack
2. Put the cage on the LAF bench
3. Lift the two white locks on the wings straight upwards
4. Unfold the wings from the top side down and remove the lid

Follow the same procedure in reverse order to close the cage:

1. Put the lid immediately on top of the cage, moving it carefully into the correct position
2. Fold in and click the wings into place from the bottom upwards
3. Push down the white locks and put the cage back in the rack
4. NB! Make sure the cage is properly connected to the ventilation system