UiO : Universitetet i Oslo
Institutt for medisinske basalfag, Avdeling for komparativ medisin

Standard operasjonsprosedyre: Information and actions upon receiving health monitoring results

SOP nr: 13-02
Opprinnelig dato: 17.04.2020
Revidert dato: 30.10.2023
Gyldig til dato: 03.11.2025

Forfattet av: Katarzyna Joanna Zelewska
Revidert av: Katarzyna Joanna Zelewska
Godkjent av: Espen Engh

INFORMATION DISSEMINATION AND ACTIONS TO BE TAKEN ON RECEIVING HEALTH MONITORING RESULTS

1.0 PURPOSE

Routine health monitoring (HM) of rodents provides important information on the microbiological status in the rodent facility and frogs room. This procedure is related to SOP 13-01 "Routine health monitoring in KPM" at our homepage.

1.1 To define the administrative routines to be implemented after receiving and evaluating results from HM, including routines governing the dissemination of information to users and staff and the actions to be implemented.

1.2 To standardize the procedure for responding to confirmed infections in order to improve work at KPM, to limit the spread of infection to other animals and to protect users and personnel against zoonotic agents.

2.0 DISTRIBUTION OF RESPONSIBILITY

2.1 The Head of Department (Designated Veterinarian) at KPM is responsible for approving the procedure, for gathering veterinary advice of relevance for this procedure, and for generating HM reports for communication to users via the KPM web page.

2.2 The Designated Veterinarian together with the PMSK must analyse the health monitoring results and upon receipt of positive results, take appropriate action if there is a risk of the spread of potential infectious pathogens or zoonotic agents.

2.3 The Designated Veterinarian together with the PMSK decides on the number and types of necessary follow-up tests.

2.4 The Designated Veterinarian provides necessary information and training for staff.

2.5 Each user of the facility and the personnel of the animal department are responsible for adhering to the procedure at all times.

2.6 The responsible veterinarian may delegate the tasks described in paragraphs 2.1 – 2.5.

3.0 PROCEDURE

3.1 Routine HM is performed in accordance with SOP 13-01 "Routine health monitoring in KPM".

3.2 Results from the screening are sent to the PMSK, who will forward the results to the Designated Veterinarian. The PMSK and the Designated Veterinarian discuss the results from the single analyses and the complete set of reports.

3.3 The results of routine HM must be communicated in FELASA-style format (Federation of European Laboratory Animal Science Associations), including results for the past 18 months. The reports should be generated at room level.

3.4 The reports are made available to users on the KPM web page ASAP and within 14 working days of the date of receiving the reports.

3.5 SOPF Health Status: free from all pathogens recommended by FELASA, including opportunistic bacteria; SPF Health Status: free from all pathogens recommended by FELASA except opportunistic bacteria; MDU Health Status: the presence of certain pathogens on the FELASA list is permitted.

3.6 Actions must be taken in the case of positive results showing unwanted and unacceptable agents in one or several animal rooms. A list of undesirable and unacceptable pathogens in mice and rats with corresponding actions is included in Table 1 and 2.

3.7 A list of undesirable and unacceptable pathogens in frogs with corresponding actions is included in Table 3.

3.8 Every positive case of the categories listed in point 3.5 above should be confirmed by a second test.

3.9 Proceedings after receiving positive results: euthanasia or isolation of animals using ISO cages in a given room or quarantine room.

3.10 **Actions to be taken if positive results in a colony can be immediately confirmed:**

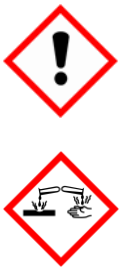
- Radical elimination (RE). When infection is confirmed (based on a minimum of two analyses), users and other relevant co-workers are informed when the first and second analysis results are received. The Designated Veterinarian and the PMSK establish restricted access to the affected room, introduce a hygiene regime and stop active experiments after receiving positive results for the first time. The infected population in the affected areas/rooms is terminated by euthanasia ASAP. In the case of valuable unique animals, the possibility of transfer to KPMe for rederivation can be evaluated. The affected areas must be completely disinfected, using both wet disinfection with Virkon/Prochlor and H_2O_2, before new, clean animals can be introduced.

- Stepwise elimination (SE): when infection is confirmed (based on a minimum of two analyses), users and other relevant co-workers are informed when the first and second analysis results are received. Clean and dirty animal rooms are established if possible, and routines for the transport/movement of animals and equipment and routines for cage changes will be made ASAP. Animals in the affected rooms will be terminated in a stepwise manner. The Designated Veterinarian and the PMSK may decide to limit access to the affected room(s) and stop active experiments. The rederivation of infected lines should be carried out using external suppliers if possible. Complete disinfection of the affected areas, including both wet disinfection and gassing of the room(s) with H_2O_2, must be carried out before new, clean animals can be introduced.

- Sporadic acceptance (SA): acceptance when some agents are found sporadically and there are no significant clinical symptoms or impact on results of research - no action is taken in the room, but the affected animals are monitored and the spread of infection is limited as rapidly as possible. KPM does not inform users about detection of pathogen assigned to the group classified as “sporadic acceptance”.

4.0 HEALTH, SAFETY AND ENVIRONMENT (HSE)

Carbon dioxide	**CAS no**	**Pictogram**	**Hazard statements**	**Precautionary statements**
	124-38-9		H280 Contains gas under pressure - may explode if heated	P403: Store in a well-ventilated place.

Rely+ On Virkon	**CAS no**	**Pictogram**	**Hazard statements**	**Precautionary statements**
Pentapotassium bis(peroxymonosulphate) bis(sulphate) Malic acid Sulphamidic acid Sodium dodecylbenzenesulfonate Dipotassium peroxodisulphate	70693-62-8 6915-15-7 5329-14-6 25155-30-0 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 trigger 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.

Contec 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.

Hydrogen peroxide 35%	**CAS no**	**Pictogram**	**Hazard statements**	**Precautionary statements**
	7722-84-1		H271 May cause fire or explosion; strong oxidizer. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H332 Harmful if inhaled. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects.	P280 Wear eye protection. P302 + P352 IF ON SKIN: wash with plenty of soap and water. P305 + P351 + P338 IF IN EYES: rinse carefully with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical advice/ attention.

4.1 Everyone who handles animals must have adequate training and practice.

4.2 Everyone must have adequate training to ensure that they use the proper clothing and protective gear.

4.3 Work is to be carried out under ventilation to avoid exposure to allergens and the spread of potential contamination to the surrounding areas.

4.4 Everyone who handles chemicals must have adequate training and access to proper protective gear to ensure the safe use of these chemicals.

4.5 Everyone should be familiar with the Eco Archive and Safety Data Sheets for the chemicals they may be exposed to.

4.6 Everyone involved should be properly trained in the termination of contaminated animals and the decontamination of areas after an infection.

5.0 EQUIPMENT AND MAINTENANCE

5.1 Kimtech Purple Nitrile Xtra (or other suitable gloves)
5.2 Crocs for dirty side
5.3 Disposable overalls
5.4 Proper face mask to protect against microorganisms
5.5 Safety glasses
5.6 Cadaver bags, containers for hazardous waste, cable ties
5.7 Garbage bags
5.8 Mobile device for the euthanasia of animals.
5.9 Personal full face mask with proper respiratory filter
5.10 Soapy water
5.11 Disinfectants: 70% ethanol, Virkon/Prochlor
5.12 Mop and bucket
5.13 H_2O_2 disinfection equipment

6.0 HISTORY OF EDITING

6.1 The main body of this procedure is adopted from current procedures in place at the University of Oslo – InVivo facility IBV, is in accordance with advice from the Designated Veterinarian for rodents in the KPM, and adjusted to local routines. NTS (Norwegian Transgenic Center) has also contributed to this SOP. The procedure is revised annually, or when new information of relevance is presented.
6.2 03.09.2020: Katarzyna Joanna Zelewska and Espen Engh
6.3 10.09.2020: Added chemical tables under 4.0 HSE (Frøydis Lie Kilmer)
6.4 02.06.2021: Sentence 3.08 added.
6.5 03.11.2022: Added sentence: "KPM does not inform users about detection of pathogen assigned to the group classified as "sporadic acceptance"."
6.6 30.20.2023: Katarzyna Joanna Zelewska

7.0 REFERENCES

7.1 Mähler M. at all. FELASA recommendations for health monitoring of mouse, rat, hamster, guinea pig and rabbit colonies in breeding and experimental units. Lab. Anim. Vol 48, 2014

Tab.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 in mice				
Reovirus type 3				
Hantaviruses				
Sendai virus				
Lactate-deydrogenase elevating virus				
Polyomaviruses (mouse polyomavirus, K virus)				
Herpes viruses (mouse cytomegalovirus, mouse thymic virus)				
Bacteria and fungi				
Helicobacter spp (with differentiation to species level <u>if positive:</u> H. hepaticus, billis, typhlonius, ganmani, mastomyrinus, rodentium)				
Rodentobacter heylii (Pasteurella pneumotropica Heyl)				

Rodentobacter pneumotropicus (Pasteurella pneumotropica Jawetz)				
Streptococci b-haemolytic (not group D)				
Streptococcus pneumonia				
Citrobacter rodentium				
Clostridium piliforme				
Corynebacterium kutscheri				
Mycoplasma pulmonis				
Salmonella spp.				
Streptobacillus moniliformis				
Filobacterium rodentium (Cilia-associated repiratory bacillus)				
Pneumocystis murina				
Pasteurella multocida				
Klebsiella oxytoca				
Klebsiella pneumonia				
Pseudomonas aeruginosa				
Staphylococcus aureus				
Parasites				
Fur mites (Myobia, Mycoptes, Radfordia)				
Pinworms (Aspicularis, Syphacia) Syphacia muris, Syphiacia obvelata, Aspiculuris tetraptera				
Giardia muris				
Spironucleus muris				
Cryptosporidium spp				

Entamoeba muris				
Tritrichomonas muris				

- Exception: dispensation for rederivation on specific terms

Tab. 2. Pathogen allowance at KPM (rats)

Agent	Conventional	MDU
Viruses		
Parvoviruses: Kilham rat virus, Rat minute virus, Rat parvovirus, Toolan's H-1 virus		
Pneumonia virus of mice		
Rat coronavirus/Sialodacryoadenitis virus		
Rat theilovirus		
Hantaviruses		
Mouse adenovirus type 1 (FL)		
Mouse adenovirus type 2 (K87)		
Reovirus type 3		
Sendai virus		
Clostridium piliforme		
Helicobacter spp (with differentiation to species level if positive: H. hepaticus, billis, typhlonius, ganmani, mastomyrinus, rodentium)		
Mycoplasma pulmonis		
Rodentobacter heylii (Pasteurella pneumotropica Heyl)		
Rodentobacter pneumotropicus (Pasteurella pneumotropica Jawetz)		
Streptococci b-haemolytic (not group D)		
Streptococcus pneumonia		
Filobacterium rodentium (CAR bacillus)		

Pneumocystis carinii		
Salmonella spp.		
Streptobacillus moniliformis		
Bordatella bronchiseptica		
Corynebacterium kutscheri		
Klebsiella oxytoca		
Klebsiella pneumonia		
Pseudomonas aeruginosa		
Staphylococcus aureus		
Pasteurella multocida		
Parasites – endo- and ectoparasites (reported to the genus level)		
Fur mites (Myobia, Mycoptes, Radfordia)		
Pinworms (Aspicularis, Syphacia) Syphacia muris, Syphiacia obvelata, Aspiculuris tetraptera		
Giardia muris		
Spironucleus muris		
Cryptosporidium spp		
Entamoeba muris		
Tritrichomonas muris		
Encephalitozoon cuniculi		

Tab. 3. Pathogen allowance at KPM (frogs)

Agent	**Conventional**
Batrachochytrium dendrobatidis	

Cryptosporidium spp.	
Mycobacterium chelonae	
Mycobacterium marinum	
Pseudocapillaroides xenopi	
Pseudomonas aeruginosa	
Ranavirus spp.	
Salmonella spp.	

	Radical elimination (RE)
	Stepwise elimination (SE)
	Sporadic acceptance (SA)