Laboratory animal journals in tick@lab

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Updates on content. Removal of irrelevant information. The section of paper journals is moved to appendix 2. Replaces CMS-101/1.1.

Introduction

All work with laboratory animals must be documented in accordance with the legislation: The Animal Welfare Act, the Animal Welfare Ordinance, and the Swedish board of Agricultures regulation and general advice on laboratory animals SJVFS 2029:9 saknr L150 (Please see appendix 1 for a translation of relevant sections).
All animal journals must be done in the electronic system Tick@lab, provided by A-tunes. The following guideline aims to facilitate good journal keeping at the animal facilities at Comparative Medicine.

Purpose

This guideline provides general and specific information about the tick@lab system to all personnel (e.g. animal technicians, researchers, veterinarians, Named animal care and welfare officer (NACWO)) working with laboratory animals.

Journals in Tick@lab

General Information

All observations concerning animal welfare, procedures, and terminations performed on laboratory animals must be documented in the animal´s journal. This is done under "animal history" in tick@lab and can be done for an individual animal or a batch of animals. For tutorials, please go to Tick@Lab tutorials.

1) The ethics license holder is fully responsible to ensure that the information in the animal journals is continuously updated and correct.
    a. However, it is the responsibility of the person performing a procedure or an observation to update the journal.
2) The laboratory animals must stand on the correct and valid laboratory animal ethics license (here called ethics license) prior initiation of an experiment.
3) The status of the animal must be changed from "Ready" to "In experiment" at the start of a study or procedure. This will ensure that the used animal is reported corrected in the system.
4) The journal notation/s must **always and continuously** be done under "animal history" in Tick@lab. Observations and/or procedures should be

done in conjunction with the observation/procedure or immediately after execution, i.e. the same day.

5) Several animals can be marked as a cohort and the "Animal history" notation can be done for all animals at the same time if they have undergone the same procedure and/or the observational outcome was the same.

   NB: Non-human primate, rabbits, cats, and dogs must have individual journals.

   NB: The animal journal must give clear information about the procedures a specific animal has been subjected to. For animals registered in batches, e.g. zebrafish, the animal journal entry can be done batchwise as long as all animals in the respective batch have been subjected to exactly the same procedures.
   It is very important that you don't make the same journal entry for 20 animals if 10 of these animals were treated with a substance and 10 were treated with placebo.

   NB: The daily care done by the animal facility staff is documented on separate day lists usually found at the door into the animal room.

6) Anyone, e.g. animal technician, veterinarian, facility staff, researchers oversight officers, must be able to understand what has happened to an animal from the "Animal history" record, e.g.
   a. Animal welfare parameters have been evaluated in accordance with the ethics license and the humane endpoints has not been reached or if reached the animal was terminated.
   b. Start, duration and recovery of anaesthesia.
   c. Time/date for administrations of analgesia.
      i. You **cannot** write "analgesia was provided for 2 days post-op". You **must** write each day analgesia was provided.
   d. Time/date for post-procedure care including observations. If all looks fine this must also be documented.
   e. Unexpected events during experiment including time, what happened, was humane endpoint reached, veterinary contact/involvement etc.
   f. Reason for termination of the animal including how the animal was killed and control method used.
   g. The actual severity level for animals that has been used in experiments.

        i. It is the highest severity level an animal has reached during the entire study that must be set for individual animals. This includes cumulative suffering if more than one procedure has been performed on the animal.

7) A detailed experimental protocol/explanation must be attached the individual animal if short description or abbreviations are used.
    a. Templates are recommended and there are several templates that you can chose in tick@lab.
    Please contact the tick@lab team if you want to create your own templates for your experimental setup.
    b. You must always document times, dates and animal welfare check-ups in the journal.
8) In accordance with SJVFS 2019:9 saknr L150 ch. 11 §5, the veterinarian must be contacted prior start of experiments for all procedures that are classified as severe severity (avsevärd svårhetsgrad) or for procedures where the veterinarian has requested to be informed prior start.
    a. This can be done via task in tick@lab or via an email to vet@km.ki.se. Please include what procedure will be done.

Practical instructions for journal keeping

Journal keeping prior initiation of experiment

- Animals that not yet are in an experiment or between studies (e.g. for animals that has been approved for re-use by the facility veterinarian) are in the status “Ready”.
- Observations must be documented under Animal history e.g. wound including monitoring and, if applicable, when it healed, reason for single housing, other illness that does not reach humane endpoints.
- Termination of an animal that has never been used in an experiment.
    - Go to “Termination”.
    - Chose exit reason, e.g. “bred-but-not used”
    - Describe the reason for termination under “Animal history”. Describe also the killing and control methods.
    - Press “Save” and close the window.
    - *Please note that severity level is not relevant for non-experimental animals.*

To start and end an experiment

Animals used in experiments must be put in the status “In experiment”. This will ensure that all used animals are reported correctly in the yearly reports and minimise the hands-on counting that you may need to do for the yearly statistical reports over animal usage.

1) Change the status of animal/s to “In experiment”:
    a. In the pop-up window: You can make a comment e.g. what type of experiment
    b. Under “Severity”, chose the prospective severity level appropriate for the experiment.
    c. Press “Continue”.
2) Document procedures/observations under “Animal history”, use a template if suitable.

Non-Recovery experiment (Terminal + organ)

The severity level terminal + organ can only be used for animals that are killed without any previous interventions, e.g. for tissue, embryo collection. Animals that undergo any prior procedures including anaesthesia and/or develops an adverse phenotype must be reported under another suitable severity level.

a. Go to “Termination” and, if you did not put the animal in status “In experiment”, tick the “Exit as used box”.
b. Chose exit reason (i.e. Experimental endpoint).
c. Describe the reason for termination under “Animal history”, e.g. tissue collection. Please observe that embryos from the last trimester must be counted. Describe also the killing and control methods.
d. Chose correct severity level, i.e. “terminal + organ”
e. Press “Save” and close the window.

Non-recovery experiment (Terminal)

The severity level terminal can only be used for animals that never wakes up from anaesthesia, i.e. non-recovery experiments where all procedures. This severity level may also be used if an animal under anaesthesia is terminated due to humane endpoint reached instead of waking up e.g. something went wrong during surgery.

a. Change the animal status from “Ready” to “In experiment”.
b. Describe when anaesthesia was initiated and what was provided, duration of anaesthesia, what procedure/s was done under “Animal history”.
   You need to describe if anything unexpected happened leading to premature termination of the animals (i.e. humane endpoint reached).

c. Go to "Termination" in the end of the experiment.
d. Chose exit reason (i.e. Experimental endpoint).
e. Describe the reason for termination under "Animal history", e.g. tissue collection. Describe also the killing and control methods.
f. Chose correct severity level, i.e. "terminal".
g. Press "Save" and close the window.

Recovery experiment (Mild, Moderate, or Severe)

The severity levels mild, moderate, and severe are used for all experiments where animals undergo recovery experiments e.g. gavage, injections, administration of various substance and diets, anaesthesia allowing animals to wake up, behaviour tests. The actual severity level is determined when the entire experiment is ended and must reflect the animal´s suffering during the entire experiment. Several factors influence what the actual severity level is e.g. combination of procedures, type of procedure, phenotypes, duration, measures taken to reduce suffering (for more information: Recommendation 9 Assessment of severity levels in research animals).

a. Change the animal status from "Ready" to "In experiment".
b. Continuously update the "Animal history" with procedure/s and observation/s throughout the experiment.
   - Use templates if suitable.
   - It must be clear from the journal what has happened to the animal.
   - You need to describe if anything unexpected happened leading to premature termination of the animals (i.e. humane endpoint reached).
c. The veterinarian must be involved for severe severity procedures/models.
d. Press "Save" and close window after each notation.
e. At the end of the experiment, go to "Termination" in the end of the experiment or if the experiment needs to stop prematurely.
f. Chose exit reason (Experimental endpoint or Human endpoint reached).
g. Describe the reason for termination under "Animal history". Describe also the killing and control methods.
h. Chose the appropriate severity level based on what the animal has experience during the entire experiment.
i. Press "Save" and close the window.

Quick reference guide for all animal journals.

The following information must be found in the animal journals regardless of the animal is in experiment or not.

- Registration number of the ethics license
- Origin of the animals (bought, own breeding)
- Date of arrival/date of birth/date of weaning
- Number of animals (in each group)
- Identity if appropriate
- Species/strain/gender
- For animals in experiments: All actions performed with the animals, with date (time if used) and signature.
- Diseases/injuries with action taken due to them, including date and signature.
- Culling/deaths with reason/probable cause, including date and signature.
    - The severity level is not defined for animals that never been in an experiment or never developed an adverse phenotype.

Appendix 1 Relevant sections of SJVFS 2019:9 saknr L150

Note 1: *You should have read and understood SJVFS 2019:9 saknr L150 prior work in animal facilities.*

Note 2: *The English translation is only a helping tool and not valid in terms of the law.*

Chapter 8: Journals in general

The ethics license holder has the responsibility to ensure that journals are adequately produced. The NACWO ensures that journals are kept in accordance with §§ 4-9.

§ 4 Records shall be kept individually for all laboratory animals used in animal experiments. However, a record may be kept for a group of laboratory animals providing that

1. the laboratory animals are covered by the same ethical approval of animal experiment and are subjected to the same procedures,
2. the laboratory animals are kept in the same cage, box, room, or corresponding, as well as
3. it applies to other animals than primates, dogs, cats, or rabbits

§ 5 When new laboratory animals arrive at a laboratory animal facility, the following information shall be recorded:

1. Arrival date.
2. From whom the animals are acquired, and birthplace for primates, dog, and cat, if that information is available.
3. The origin of the laboratory animals including if they are purpose bred and when it comes to primates, if they are offspring of primates bred and raised in captivity.
4. Identity according to marking, if available.
5. If a primate, dog, or cat has arrived at the laboratory animal facility before it has been weaned and it has not been possible to mark the animal with its identity, then the identity of the animal's mother shall be noted in the record.
6. Species and, where applicable, breed, or strain.

7. Gender, when this is suitable.
8. Birth date or weaning date, if these are known.
9. When keeping a record for a group, the number of animals.

§ 6 For all laboratory animals kept at a laboratory animal facility, the following information shall be recorded continuously:

1. Relevant information about husbandry, care, and supervision.
2. Information about diseases and injuries as well as any actions which have been taken due to the mentioned.
3. Date of death or killing which is not part of an animal experiment. The cause for killing shall be recorded as well as cause of death if known.

§ 7 For laboratory animals used in animal experiments, performed procedures including time for these shall be recorded in chronological order. The following information shall be included in the record:

1. Reference number of the ethical approval of animal experiment.
2. The principal investigators instructions and other documentation as specified in Ch. 11, § 1.
3. If the laboratory animal has been used before, according to Ch. 11, §§ 15 and 16, and if so in which animal experiments.

Chapter 11: Actions in connection with experiments

§ 1 The principal investigator shall ensure that personnel who will perform an animal experiment, or care for laboratory animals in connection with the animal experiment, can take part of the application for ethical approval and the decision on ethical approval of the animal experiment.

The principal investigator shall ensure that personnel according to the first paragraph receive written instructions on

1. end-point and humane end-point for the animal experiment,
2. how the laboratory animals' suffering is assessed and continuously documented, as well as
3. how supervision of the laboratory animals before, during, and after procedures within the animal experiment, shall take place.

§ 2 The principal investigator shall ensure that all unnecessary suffering within the framework for an animal experiment is prevented and, if present, is stopped. The

principal investigator shall also ensure that measures are taken according to §§ 9–11.

The NACWO shall ensure that the principal investigator prevents and stops suffering according to the first paragraph.
If there are uncertainties in the assessment of if the laboratory animal is subjected to unnecessary suffering according to the first paragraph, then the laboratory animal veterinarian or expert shall be consulted. If the laboratory animal veterinarian or expert have another opinion than the principal investigator or named officer, this shall be noted in the record.

§ 3 The principal investigator shall ensure that the animal experiment is performed according to the ethical approval.

The NACWO shall document any non-compliance and which measures have been taken to rectify non-compliance with the ethical approval.

§ 4 Surveillance of the laboratory animals during animal experiments shall take place to such an extent that it can be guaranteed that the laboratory animals are not exposed to greater suffering than necessary. If needed, there shall also be surveillance during nighttime. Written plans shall be established for how the person monitoring the animals shall act in case of both expected and unexpected effects.

> *General Advice For § 4*
> *If information about the expected course of events is missing, surveillance shall take place at such frequent intervals that the laboratory animals do not risk being subjected to more suffering than necessary*.

§ 5 A laboratory animal veterinarian or expert shall participate in surveillance of the laboratory animals at

1. all animal experiments classified as severe,
2. animal experiments where the Regional Animal Ethics Committee has decided that it is suitable, as well as
3. in other animal experiments where the veterinarian or expert has assessed it to be suitable. The principal investigator shall inform the designated laboratory animal veterinarian or expert about when an animal experiment according to the first paragraph will begin.

Appendix 2 Paper journals

There may be situations where you cannot use tick@lab for journal keeping e.g. the tick@lab system is down, the KI server is down, animals are moved to institutions outside KM/KI. In such situations, journal keeping must be done using paper journals which can, if suitable, be attached to the animals when system is up and running again.

General points.

1. The ethics license holder is fully responsible to ensure that the information in the animal journals is continuously updated and correct.
    a. However, it is the responsibility of the person performing a procedure or an observation to update the journal.
2. Experimental journals must always remain in their designated place in the animal facility. Reference numbers of the establishment site license (verksamhetstillstånd) for the facility and the ethics license, ethics license holder, animal information etc must be stated.
3. Use one experimental journal per cage or cohort of animals within the same experiment. Information in the journal must correspond with the cage cards and vice versa. Individual journals must always be kept for certain species (non-human primates, rabbits, cats, and dogs).
4. Anyone, e.g. animal technician, veterinarian, facility staff, researchers oversight officers, must be able to understand what has happened to an animal from the experimental journal.
    a. Animal welfare parameters have been evaluated in accordance with the ethics license and the humane endpoints has not been reached or if reached the animal was terminated.
    b. Start, duration and recovery of anaesthesia.
    c. Time/date for administrations of analgesia.
        i. You **cannot** write “analgesia was provided for 2 days post-op”. You **must** write each day analgesia was provided.
    d. Time/date for post-procedure care including observations. If all looks fine this must also be documented.
    e. Unexpected events during experiment including time, what happened, was humane endpoint reached, veterinary contact/involvement etc.
    f. Reason for termination of the animal including how the animal was killed and control method used.
    g. The actual severity level for animals that has been used in experiments.

        i. It is the highest severity level an animal has reached during the entire study that must be set for individual animals. This includes cumulative suffering if more than one procedure has been performed on the animal.
5. A detailed experimental protocol/explanation must be attached the individual animal if short description or abbreviations are used.
    a. You must always document times, dates and animal welfare check-ups in the journal.
6. The journal notation/s must **always and continuously** be updated. Observations and/or procedures should be done in conjunction with the observation/procedure or immediately after execution, i.e. the same day.
7. The experimental cage must be labelled with correct experimental cage card.
8. In accordance to SJVFS 2019:9 saknr L150 ch. 11 §1, the veterinarian must be contacted prior start of experiments for all ethics licenses of severe severity (avsevärd svårhetsgrad).
    a. This can be done via task in tick@lab or via an email to vet@km.ki.se. Please include what procedure will be done.

Practical information for using paper journals

Experiment journals must be continuously updated during the experiment. How often and with what depends on the ethics license. For highest severity, veterinarian must be informed one week prior initiation to decide how s/he should be involved in the experiment.

Non-recovery experiment (Terminal or Terminal+organ).

The severity level terminal + organ can only be used for animals that are killed without any interventions, e.g. for tissue, embryo collection. Animals that undergo any procedures including under anaesthesia and/or develops an adverse phenotype must be reported with another suitable severity level.

The severity level terminal can only be used for animals that never wakes up from anaesthesia, i.e. non-recovery experiments where all procedures. This severity level may also be used if an animal under anaesthesia are terminated due to humane endpoint reached instead of waking up e.g. something went wrong during surgery.

Below information must be included in the paper journal:

1. Date of experiment.
2. Number of animals including id-numbers if applicable.
3. Experimental procedure e.g. tissue collection, anaesthesia including starting time, duration and what procure/s was done prior termination.
4. Killing and control methods
5. Severity level
6. Name and signature of the person performing the procedure must be clearly stated.

Recovery experiment (Mild, Moderate, or Severe).

The severity levels mild, moderate, and severe are used for all experiments where animals undergo recovery experiments e.g. gavage, injections, administration of various substance and diets, anaesthesia allowing animals to wake up, behaviour tests. The actual severity level is determined when the entire experiment is ended and must reflect the animal´s suffering during the entire experiment. Several factors influence what the actual severity level is e.g. combination of procedures, type of procedure, phenotypes, duration, measures taken to reduce suffering.

Below information must be included in the paper journal:

1. Date of experiment.
2. Number of animals used, including ID numbers if applicable.
3. Description of experimental procedure/s e.g. insertion of catheter under anaesthesia, surgery transplanting cells under kidney capsule under anaesthesia, oral gavage including what and volume, injection including what, where and volume, fasting animals, special diet or fluid; required post-surgery health inspection.
4. Always include date and time for e.g. procedure, anaesthesia, analgesia, administration of compound.
5. Inspection of animal health: Include date + note about animal health (e.g. weight monitoring, fur, body posture, other health check-ups are to be logged).
6. Subsequent treatment: Date, animal ID, action taken are to be logged.
7. Killing and control methods
8. Severity level
9. Name and signature of the person performing the procedure must be clearly stated.