

## Instructions for completing mouse aggression study data collection

The aim of the NC3Rs mouse aggression study is to collect data on the prevalence and triggers of cage aggression in group-housed male mice.

This document is aimed at participating animal technicians and describes the data collection requirements for Part A of the study.

### How technicians can participate in the study

- Technicians are asked to observe group-housed male mice during daily routine cage checks and to record information on incidents of aggression over a **consecutive four-week period**.
- Technicians can claim up to **ten hours Continual Professional Development (CPD) credits** from the [Institute of Animal Technology](#).
- We have created an **Excel spreadsheet** for recording your data - download it [here](#).
- A **video tutorial** which provides background information on the aims of the study, together with step-by-step instructions on how to collect and submit data can be viewed [here](#).
- Discuss and co-ordinate with your Facility Manager and other participating colleagues to ensure that the data collection tasks are shared and that there is no duplication in data entry.
- You are advised to **start data collection by 23 October 2017** to ensure that you can complete the data collection tasks in full.
- **One Excel spreadsheet per facility** should be submitted to the NC3Rs by **30 November 2017** via email to [MouseAggressionStudy@nc3rs.org.uk](mailto:MouseAggressionStudy@nc3rs.org.uk).
- Please take the time to watch the tutorial and email [MouseAggressionStudy@nc3rs.org.uk](mailto:MouseAggressionStudy@nc3rs.org.uk) if you have any questions at any point.
- Thank you in advance for your contribution and we hope you enjoy participating in this important study.

### Step by step guide to getting started

1. Co-ordinate with other colleagues within your facility and discuss with your Facility Manager to obtain approval to participate and watch the on-line tutorial. You will then need to decide on your four-week Data Collection Period and download the Excel spreadsheet from the NC3Rs website.
2. Download the mouse aggression template from the NC3Rs website and save a copy to your computer with the name of your facility as the file name prefix.

3. The first time you open the file, you will see a security warning and you will need to click 'enable content' to continue. You are now ready to start data entry.
4. Once you have downloaded the Excel template and reviewed the consent obligations detailed in section A1, email the NC3Rs to acknowledge your consent to participate in the study. Include your IAT membership number if you would like to be eligible for IAT CPD credits.
5. Next you need to decide how to divide the work between technicians participating in the study.
6. Discuss amongst colleagues how to share the workload in a sustained manner and to avoid duplication in data entry.
7. We suggest that one technician takes responsibility for completing section A2 – questionnaire.
8. We suggest that you divide the task of completing section A3 – the injuries log, between several technicians so that each technician is assigned to a specific area and has responsibility for monitoring and recording the data when aggression-related injuries arise.
9. You may decide to provide each technician with their own copy of the injuries log spreadsheet. If you do this, please download a separate file for each technician from the NC3Rs website and complete section A3. (Do not copy sheet A3 into a new file from a version of the template already downloaded because the dropdown options will not copy across. You may choose to assign one technician to have overall responsibility for compiling all the data into a single Excel file for submission to the NC3Rs at the end of the Data Collection Period.
10. We suggest that one technician takes responsibility for completing section A4 – total number of mice in the facility over the Data Collection Period.
11. We recommend that technicians take a laptop or tablet computer into the animal facility to enter the data real-time, but we recognise this may not always be possible.
12. Depending on the information recorded on your cage cards, a few of the cells may need to be completed after checking records held elsewhere or it may be possible to build a report from your in-house database and use this to populate the spreadsheet.
13. You are now ready to start recording the data.
14. Remember to regularly save and back up your data files.

15. Remember to check data entries to minimise errors in data collection. You may wish to ask a colleague to check that you have not missed any information before finalising the spreadsheet.
16. Your Facility Manager must complete section A1 of the Excel spreadsheet.
17. Your Facility Manager must send one complete spreadsheet per facility to the NC3Rs by the 30 November 2017.

### **Detailed instructions on completing the spreadsheet**

There are four sections to Part A: A1 Consent, A2 questionnaire, A3 injury log and A4 total mice numbers.

#### **Section A1 (Consent)**

- Section A1 (Consent) must be completed by your Facility Manager.
- Each Facility Manager must consent to the facility they represent participating in the study by completing Section A1 (Manager Consent). Facility Managers must also discuss the consent requirements of the study with participating technicians. The Facility Manager is responsible for sending the Excel data to the NC3Rs by the 30 November 2017 deadline.
- Technicians must get permission to participate in the study from their Facility Manager before collecting any data. Then read and copy the text in the grey box from Section A1 (Technician Consent) and email it to the NC3Rs. This is to acknowledge your consent to participate in the study.
- If you would like to be awarded IAT CPD credits, you must also provide your IAT membership number in this email. You must send your consent email to the NC3Rs before your facility submits data to the NC3Rs.
- It is important to note that any data submitted without appropriate consent in place will not be analysed. All data submitted to the NC3Rs will be treated as confidential, anonymised and held securely. A copy of the NC3Rs data Management Plan is available on request.

#### **Section A2 (questionnaire)**

- This questionnaire is focused on the standard husbandry practice at your facility and will take approximately 15-20 minutes to complete. There are a series of questions posed in column A and space to provide an answer in column B.
- Drop-down options are available for cells highlighted in blue and there is space to add any additional information related to your answer, in column C.
- Multiple answers to questions are possible. In the example shown on the screen, if you would like your response to the question, 'who are your routine suppliers of mice' to be

both 'in-house' and 'Envigo', firstly select the drop-down arrow and click 'In-house', then click the drop-down arrow again and select 'Envigo'. You can continue selecting as many choices as you wish. You may also wish to add a comment to column C to clarify your response.

- If you make a mistake in entering a drop-down response, the best approach is to select the cell where you have made the error and delete the text in the cell. You can then click the drop-down arrow again and select the response you want.

### **Section A3– injury log**

- In this section, you are asked to provide a detailed log of all aggression-related injuries observed in cages of male mice within your facility over a period of four consecutive weeks.
- We would like you to observe and collect data over four consecutive weeks between 1 September and 30 November 2017. It is up to you when you choose to start the study in your facility but the data must be collected over four consecutive weeks and must be submitted to the NC3Rs by the 30 November 2017.
- In table 1 you are asked to provide the date that data collection begins and finishes. This period of data collection is defined as the Data Collection Period of your study.
- The information required for each incident of aggression-related injury includes the date of the incident, the identification number of the injured mouse, type of cage, the number of mice housed together in the cage and if the mice are currently on an experimental study or awaiting use.
- Again, drop-down options are available for cells highlighted in blue, multiple selections per cell are possible and if you make a mistake, delete the cell entry and start again.
- If more than one mouse is injured in each cage, please provide separate entries for each injured mouse.
- Please provide information on the background strain of the mice in the cage and whether they are wild-type or genetically altered mice. Note that details of the specific genetic modification are not required. If a mixture of strains is housed in one cage, please provide details in the 'Comments section'.
- For mice sourced from an external supplier, please provide the number of male mice of the same strain received in the shipment that the injured mouse arrived and the number of cages of mice this equates to together with the tracking number and the date that the mice arrived in the facility. These non-injured mice are a good control group and you may wish to provide further information on these mice to the NC3Rs at a future date.

- As aggression in a cage can affect all mice in the cage, not just the injured mice and aggressor, we would like to collect as much information as possible on all mice in the cage. Record the date that the injured mouse was born and if the mice in the cage are not matched for age, please give an age range of the other mice in the cage in the comments section if possible. Record the date that the injured mouse was first housed with the mice in the current cage along with the date that the cage was last cleaned.
  
- Where information on the weight of mice in the cage is available from records, it should be recorded along with the date the weight measurements were taken. Mice should NOT be weighed for the purpose of entering data into the spreadsheet for the mouse aggression study as this will cause unnecessary stress to the mice.
  
- The method used to identify the mouse should be recorded together with the date that the identification method was undertaken.
  
- If all animals in the cage receive the same treatment, we can analyse the data using the cage as the experimental unit. As such, please note if all mice in the cage were subject to the method of identification on the same date. If the identification method was not carried out on all mice in the cage on this date, please add additional comments such as the number of mice in the cage subject to the method of identification on the same date as the injured mouse. If you have identified the aggressor mouse please, if possible, specifically mention if this mouse was subject to the method of identification and the date this was undertaken.
  
- If the injured mouse is on an experimental study, the date of the last procedure or procedures that the injured mouse was subject to should be recorded along with the procedures undertaken.
- Please indicate if all mice in the cage also had the procedure so that we can take this into account in our analysis. If the procedure was not carried out on all mice in the cage please comment on how many mice in addition to the injured mouse were subject to the procedure. If you have identified the aggressor mouse, please specifically mention if this mouse was subject to the procedure.
  
- Where possible, the cumulative total number of procedures that the injured mouse has been subject to should also be recorded.
  
- Each type of procedure should be counted. For example, blood sampling followed by intravenous administration of a substance, even if procedures are undertaken in quick succession should be counted as two procedures.
  
- Please indicate if all mice in the cage have been subject to the same type and number of procedures. Include further comments if mice in the cage have been subject to different procedures and or variable numbers of procedures so that we know that it is not appropriate to analyse the data using the cage as the experimental unit. Again, if you have identified the aggressor mouse, please specifically mention how many procedures the aggressor mouse has been subject to, if possible.

- Given that you will only be observing cages for a short time, there is a low likelihood of seeing behavioural disturbances in a cage real time but if you do see any aggressive behaviours such as chasing or mounting, please note your observations.
- Record details of the aggression-related injuries you observe using the drop-down options.
- The location of any hair loss or wounds such as bites or scratches to the injured mouse should be recorded. Please refer to the top and underneath view diagrams on the screen to help you specify the body location of the injuries. If more than one ear, limb or paw is affected, please add details in the comments section.
- These descriptions have been adapted from the Mouse Welfare Terms, a list of standardised descriptions for visible characteristics affecting mouse welfare. However, the drop-down options available in the spreadsheet do not replace the welfare terms you are asked to record in any in-house welfare system.
- Please also provide details of the actions you then took in the cage to minimise further injury to the mice. This may for example include removing the bully mouse or adding further cage enrichment. You may also wish to add any further comments.
- Following the initial observation of an injured mouse in a cage, you are asked to continue observing the cage for 7 days to note whether the actions you take to minimise further injury to the cage are effective. You may also wish to add additional comments from your observations during the seven day follow up.

#### **Section A4 total mice numbers**

- In this section, you are asked to provide a figure for the total number of male mice of each strain housed in your facility over the Data Collection Period.
- We would like to know the total number of male mice of each strain and the total number of cages containing mice of each strain housed in your facility during the Data Collection Period. This is so that we can calculate the prevalence of aggression-related injuries.

*Prevalence: Number of mice or number of cages of mice presenting with aggression related injuries as a percentage of the total number of mice or total number of cages of mice in your facility.*

*Incidence: Number of new cases of mice or new cages of mice presenting with aggression related injuries as a percentage of the total number of mice or total number of cages of mice in your facility.*

- Mice that may have been injured before the Data Collection Period will not be excluded from our study and so we will be calculating the prevalence of aggression-related injuries. This may be a combination of new incidents plus existing cases of aggression.

- For each strain of male mice housed in your facility during the Data Collection Period, you are asked to record in Table 2A whether the strain is wild-type or genetically modified as well as the total number of male mice of each strain that have been housed during this period. Details of the specific genetic modification are not required, so please group all genetically-altered mice on each background strain, regardless of the specific genetic modification, in one entry.
  
- We would also like to know the total number of cages of male mice that have been housed in your facility during the Data Collection Period.
  
- As the number of mice and number of cages in your facility may change on a daily basis, depending on the number of mice received/born and the number of mice culled within the Data Collection Period, you may find it easier to complete Table 2B in order to calculate the figures required for columns C and D of Table 2A. You may choose to use records or to physically count the mice in each cage to complete the information required for Table 2B.
  
- Our approach is limited in that it does not take into account the length of time that mice are housed in the facility or the age of the mice. If you are able to provide further data in columns F and G of Table 2A to indicate the number of mice and number of cages of mice housed in your facility for the entire duration of the Data Collection Period, this would be informative but they are not mandatory fields for you to complete.
  
- If you would like to provide additional data on the age of mice housed in your facility during the Data Collection Period please contact the NC3Rs team to discuss.

**Some final things to remember**

1. Get permission from your Facility Manager to participate.
  
2. Send an email to the NC3Rs to confirm your consent prior to you submitting data to the study.
  
3. The Data Collection Period is a consecutive four-week period of your choice between 1 September 2017 and 30 November 2017.
  
4. Please check your data entries thoroughly to minimise errors.
  
5. Your Facility Manager is responsible for submitting one complete spreadsheet per facility to the NC3Rs by the 30 November 2017 deadline.
  
6. Please submit as much data as you can but don't be put off if there are some questions that you can't answer - contact the NC3Rs at [MouseAggressionStudy@nc3rs.org.uk](mailto:MouseAggressionStudy@nc3rs.org.uk) to ask any questions at any point.