 <p>THE UNIVERSITY OF QUEENSLAND AUSTRALIA CREATE CHANGE</p>	<p>UQ Animal Ethics Committee - Standard Operating Procedure  <b>LAB_105 Tattooing using the Labstamp Machine in Mice</b>  Institutional author: <b>UQ Biological Resources</b>  AEC Reviewed &amp; Approved: April 2025  SOP Expiry: April 2028</p>	<p>Version #1.1</p> <hr/> <p>Page 1 of 6</p>
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## LAB\_105 Tattoo Identification in Mice using the Labstamp (Expiry: April 2028)

### I. OBJECTIVE

To describe the tattoo procedure using the Labstamp machine used to identify mice for UQ research projects, also reflecting the procedure used to train workers across UQ within UQBR.

**NB: The use of (\*) indicates this statement is dependent on the facility procedures**

**NB: The use of (\*\*) indicates this statement is dependent on AEC Approvals**

### II. COMMENTS / RECOMMENDATIONS

- a. A contraindication for the use of the Labstamp machine is tail defects, this including kinks, bends, wounds, or scars in the tattoo area. The tail must be in normal healthy condition.

### III. SAFETY AND COMPLIANCE

### IV. TRAINING CONSIDERATIONS

- a. Refer to LAB\_104 Identification and Tissue Collection methods in Mice and Rats

### V. EQUIPMENT

- Labstamp applicator machine
- Small and large restraint cartridges (x4 total)
- Tail gauge
- Tail oil
- Ethanol
- Weigh boat
- Ink slides (black and/or fluorescent green)
- Green and yellow needle cartridge
- Cotton buds
- UV torch
- Disinfectant \*

### VI. PREPARATION

1. Spray and then wipe the applicator machine with disinfectant, ensuring there is no needle inside.
2. Thoroughly spray the restraint and leave to sit for a minimum of 1 minute before wiping to remove residue.
3. Place all equipment into the workspace and plug the machine into the outlet (Figure 1).
4. Dispense approximately 5mL of tail oil into the weigh boat and place a cotton bud into the oil.
5. Select the restraint and needle size for the mice to be tattooed (Figure 2)
  - a. Small restraint 10-17g mice approximately
  - b. Large restraint 18-45g mice approximately

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Figure 1 and Figure 2

## VII. PROCEDURE

1. Grasp the mouse by the base of the tail.
2. Depress the silver button on the side of the red dome cover of the restraint to open tail grippers.
3. Hold the red dome open and place the mouse into the opening, place the red dome over the mouse and release the button to close the tail grippers.  
*Ensure the mouse does not have any toes trapped at the edge of the dome, and the tail is gripped at the base with the mouse against the rear wall of the dome cover.*
4. Place the mouse within the dome on a restraint paddle – head towards the handle.
5. Use the tail gauge to measure the tail to determine the needle and restraint cartridge to use (Figure 3)
  - a. Starting from the right-hand side (largest hole) place the tail gauge over the mouse tail, when it fits snugly without force this is an appropriate size.
  - b. If the tail does not fit continue using the tail gauge at the next consecutive hole until the best fit is identified.
  - c. When the tail fits into the red (small) tail gauge use the small restrainer.
  - d. When the tail fits into the blue (large) tail gauge use the large restrainer.
  - e. Take note of the relevant coloured dot as this will determine the coloured needle to use later.
  - f. Relocate the mouse to the correct restrainer if this process has identified a need to change.

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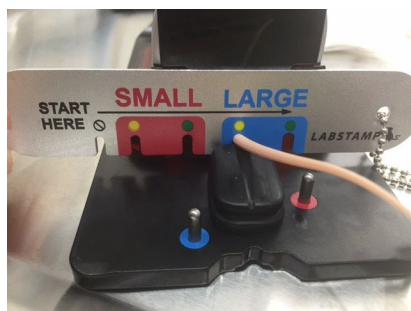


Figure 3



Figure 4



Figure 5

6. Load the correct size needle as identified at 5e into the applicator machine – press ‘change needle’, the door will reveal the gun head (Figure 4 and 5).
7. Remove the needle (identified at 5e) by gripping the clip arms see Figure 6.
8. With the needle pointing down, install the needle lining up the clip arms with the slots of the gun-head, push until the arms click into place (Figure 7).

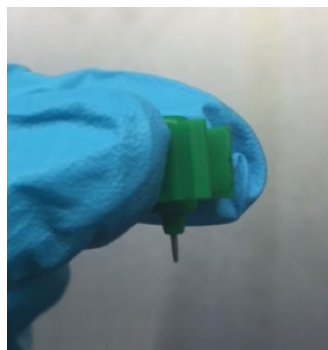


Figure 6

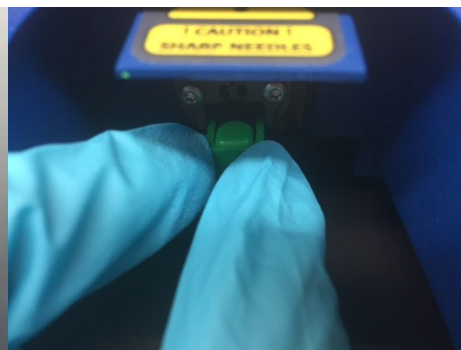


Figure 7

9. Test needle placement by gently tugging without depressing, the needle cartridge should not move.
10. Press ‘change needle’ to retract the gun head.
11. Using the cotton bud saturated in oil, apply oil to the tattoo zone approximately 2cm from the tail base. Ensure oil does not contact tail grippers as this will compromise restraint. A tissue sprayed with ethanol can clean any minor oil spills.
12. Select the ink slide colour to use and insert into the slot arrows facing towards the slot.
  - a. Black ink slides are best used on light pigmented tails.
  - b. Green ink slides (Figure 8) are best used on dark pigmented tails.

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Figure 8

Figure 9

13. Place the tail cover over the mouse tail ensuring it is extended and aligns with the 'v' groove on the tail bed. Do this gently yet firm so the tail cover doesn't quickly snap shut as the cover is magnetic. Ensure the plate is flush with the paddle. This will ensure the tail is tattooed in the correct position.
14. Insert the restraint cartridge tail first into the docking port at the front of the machine (figure 10). The status light will turn red when the restraint is detected entering the machine. Ensure the tail tip is pointing into the machine and not under the restraint cartridge.
15. The status light will turn green once loaded correctly, if it remains red re-insert the restraint cartridge.
16. Use the keypad to select the alpha/numeric ID required (Figure 11)
  - a. If a sequence of IDs is required press 'auto increment' and then enter the first ID of the sequence. Subsequent tattoos will increase according to the below rules in Table 1.



Figure 10

Figure 11

If 1 <sup>st</sup> ID is:	The next ID will be:	The final ID will be:
009	010	999
A09	A10	A99
1A1	1A2	1A9


Table 1

17. Press 'start' to begin the tattoo process, the LED will blink red.
  - a. Observe mouse behaviour, some escape behaviour is observed and can vary from strain to strain. If very active and distressed, stop the procedures and assess the mouse.
18. When tattooing is complete, the machine will beep, and the LED light will turn green.
19. Remove the restraint cartridge by gently pulling on the cartridge.
20. Remove the tail cover pulling upwards and discard the ink slide into clinical waste (single use item).
21. Using gauze blot excess ink from the tail, inspect the tattoo to ensure readability.
  - a. If bleeding of the tail occurs at the tattoo site, ensure the correct restraint and needle size were used, inspect the needle for potential defects, discard if required. Bleeding should not occur.
  - b. If you notice compression marks, bruising or bleeding on the tail it is likely the tail is too thick for the restraint, even if the tail fits within the tail gauge device. Continuing to tattoo these groups of mice should be avoided as they are likely larger and stronger and movement during the process can

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damage the tail and result in a poor-quality tattoo. If tattooing is still necessary, no more animals should be tattooed until Animal Ethics Committee (AEC) approval is obtained. Justification must be provided to the AEC for tattooing (as compared to alternative forms of identification) due to the higher welfare impact on these animals, and approval for the use of an analgesic for pain relief is required.

22. Apply a thin coat of tail oil over the tattooing area and then discard the cotton bud into clinical waste.
23. Grasp the mouse tail, depress the silver button to release tail grippers and remove the red dome cover, placing the mouse back onto the home cage for observation. The mouse should display normal behaviour.
24. Spray the restraint.
  - a. With F10 and leave for 1 minute then wipe clean if moving to another cage.
  - b. With ethanol and wipe immediately if tattooing animals within the same cage.
25. Continue procedure until all mice are tattooed.
26. Clean the tattoo needle every 5 tattoo's and in between cages.
27. Refer to LAB\_104 Identification and Tissue Collection Methods in Mice and Rats for instructions on cleaning the needle and shut down procedures of the Labstamp.

### **Cleaning the Needle**

1. Press the 'change needle' button to bring the gun head forward within the needle cartridge.
2. Grip the needle clip arms and pull to remove – take care to avoid placing your finger or hand in the way of the needle. Once removed keep the needle in the weigh boat or in the protective container.
3. Soak a cotton bud in ethanol and wipe to remove built up ink, alternatively spray ethanol on the needle until ink is removed.
4. Dry the needle using a new cotton bud wiping down from the base to the needle tip.
5. Install the needle into the gun head by lining the clip arms with the slots of the gun-head and gently push to click into place.
6. Test correct placement by gently tugging without depressing needle clip arms, there should be no movement.
7. Press the 'change needle button to retract the gun-head.

### **Clean up and Storage**


1. Remove the needle from the gun-head following the above steps.
2. If the needle has been used for > 50 mice discard into a sharps bin (refer to needle packaging for count).
3. If the needle appears damaged or bent dispose into a sharps bin.
4. If the needle has been used for < 50 mice pour ethanol into a weigh boat until half full, place the needle into the ethanol lying on its side.
5. Remove the needle from ethanol and wipe dry with a cotton bud. Place into packaging needle facing down into the sponge.
6. Spray then wipe the restraint cartridge opening with ethanol (do not spray the machine directly). If full disinfection is required, consider fumigation.
7. Spray then wipe the restraint cart with F10
8. Store the applicator machine – always ensure the needle is not connected.
9. Ensure annual servicing is completed.

## **VIII. BIBLIOGRAPHY**

### **UQBR-EXREF-001 Labstamp QuickStart Guide**

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Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Version changes
1.0	Health Sciences AEC	July 2024	None
1.0	Molecular Biosciences AEC	December 2024	None
1.0	Laboratory Biomedicine AEC	February 2025	None
1.1	Anatomical Biosciences AEC	April 2025	Minor administrative

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