BRAINTREE SCIENTIFIC, INC.
LAB RESEARCH PRODUCTS

Labstamp Technical FAQs
updated: 18 October 2018

Q: How long does a Labstamp ID last?

A: The Labstamp is engineered to deposit microencapsulated ink into the mid-dermal layer of the mouse's tail ensuring that the ID will last the lifetime of the mouse.

The 2 needle, 2 restraint system coupled with the automated robotic arm is engineered to hit tissue layer depths from 0.007"-0.011" with a mean depth of 0.009"; this range accommodates mice aged 3 weeks to adult.

Measurement of each tail using the tail gauge will give you the correct selection of needle and restraint combination ensuring the ink will reach the mid-dermal layer.

Q: Will the ink migrate to peripheral lymph nodes?

A: Traditional tattoos can cause migration to the lymph nodes due to the small foreign nature of the ink particles and the uncontrolled deposition below the dermal layer. Labstamp ink is encapsulated in polymer microspheres with a mean particle size of 5 microns, delivered to a shallow mid-dermal location, to minimize potential transport to the lymph nodes. MSDS for the ink is available.

Q: Can I re-use the ink slides?

A: No. The Tri-Cell™ Ink Slides are engineered to ensure delivery of an optimal level of ink to each character. Re-use of the slide will result in ink starvation to the characters resulting in a poor quality ID.

Q: Can I re-use the needles?

A: Yes. Needles, provided they are well maintained, cleaned regularly, and not damaged can be used for up to 50 IDs. Use beyond the recommendation can result in damage to the mouse's tail and poor ID quality.

Q: What is the purpose of the tail oil?

A: The tail oil is applied before the tattoo to allow for easier penetration of the needle into the mouse's skin, minimizing tissue trauma and preventing rapid dulling of the needle. Tail oil is again applied after the tattoo to keep the skin moist and aid in the healing process.

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Q: Does the ID hurt the mouse?

A: As with any manipulation the mouse undergoes during it's life as a research subject, it will experience minimal discomfort and stress during the ID process, which is less than 30 seconds. The needle only penetrates to the mid-dermal layer of skin (avg. of 0.009" thick) and the needle is moving at 100hz (100hz = 100 cycles/sec), which creates short, fast, micro punctures in the skin. Observation of the mouse immediately after the Labstamp ID procedure will show their behavior returns to normal.

Labstamp ID is free of subsequent complications like the trauma and infection that other methods of ID (ear notch, ear tag) can cause, resulting in a reduced risk of pain and distress over the life of the mouse.

Q: How do I prevent cross-contamination between animals?

A: The three-part mouse restraint can be disinfected with any commercial lab surface disinfectant following directions for use in animal contact areas.

Unlike manual tattoo systems that use a "flooding" technique to create the tattoo, Labstamp ink slides are single use and only contain enough ink for one ID so no ink is ever re-used or shared between animals. All packages of ink slides are irradiated prior to shipment so that the ink used will be sterile.

Needles can be easily disinfected between cages or cohorts of animals. Simply press the change needle button to expose the gun head with the needle attached, take a cotton tipped applicator moistened with disinfecting/sanitizing agent of choice and wipe down the sides of the needle. The needle can also be immersed in a disinfectant when removed from the machine.

Some commonly used disinfecting/sanitizing agents that do not leave a residue:

- 70% Ethanol or 70% Isopropyl Alcohol
- Hydrogen Peroxide

Additional disinfecting/sanitizing agents that must be rinsed to remove residue prior to re-use:

- Chlorine dioxide solution in a 1:18:1 dilution
- Quaternary ammonium compound (AKA: Quat)
- Dilute chlorhexidine solution

For strict gnotobiotic technique with barrier at cage level husbandry, Somark recommends needle disinfection between cages.

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Q: How soon after the ID Process can I perform a tail snip biopsy or blood collection from the tail?

A: A tail snip biopsy or blood collection via a tail snip can be performed immediately after the ID process. Once the mouse is restrained in the Labstamp restraint device, the distal portion of the tail is still exposed allowing you to collect your biopsy or blood sample.

For collection via the tail vein, you will need to remove the tail cover in order to adequately access the lateral tail vein. For optimal tail vein sampling or injections, allow the mouse tail to rebound for 15 minutes prior to manipulation, to allow for recovery from any vasoconstriction.

Q: Is there any special post-operative care?

A: No special post-procedural care is necessary. The last step of the procedure, applying tail oil to the surface, is all that is needed to secure complete recovery. Application of the Labstamp ID produces minimal trauma and no bleeding.

Q: Can topical analgesics be used with Labstamp?

A: Studies have shown that gas anesthesia provides no net benefit to the mouse for this procedure, but the benefit of topical analgesia has not been documented. If analgesic creams such as Lidocaine are going to be applied, they should be applied about 15 minutes prior to use of Labstamp to allow them time to act, and for the initial vasodilation to subside so that there is no unintended bleeding. Somark recommends a comparative trial to fully assess the potential benefits.

Q: Does Labstamp ID have any impact on Tail Vein Injections?

A: No. The Labstamp ID is applied to the dorsal surface of the tail, and the tail veins are on the lateral sides of the tail. The Labstamp ID is applied much shallower than the tail veins too. In some cases, the Labstamp ID may even serve as a landmark on the mouse's tail, making it easier to locate the lateral tail vein.

Q: My mice have pigmented tails; will the tattoo show up?

A: Yes. Labstamp systems deposit bold dark tattoos that are easily seen. Labstamp Black IDs have been used on many C57BL/6 mice and transgenic lines based on this strain, which typically has a grayish tail. For extremely darkly pigmented tails, such as Agouti mice (C3H), there is a Labstamp UV Green ink. This ink is green under normal lighting and fluoresces when a UV light source is applied (contact us for UV flashlights). UV Green tattoos can be seen through even the darkest of skin pigmentations.

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Q: Does a Labstamp ID interfere with MRI?

A: No. Labstamp ID uses non-metallic inks that pose no effect on MRI, or other imaging methods or research applications.

Q: Can Labstamp be used on rats?

A: Labstamp is designed and calibrated for the dimensions of a mouse tail only. At certain ages, rats resemble mice in body size and tail girth. Labstamp has been used to tattoo rat pups in an off-label application. Please contact us if you wish to use your Labstamp on rats. It will not work on the large tails of adult rats.

Q: Can Labstamp be autoclaved?

A: No. Labstamp applicator machine can be sterilized by gas methods such as Ethylene Oxide or Vaporized Hydrogen Peroxide foggers that do not involve high temperatures. Autoclaving would damage the electronic components and damage the restraints.

Q: What is the needle gauge for the Labstamp Needle?

A: Our Labstamp needles are standard tattoo "4RL" needles, as used in human tattoo systems. RL stands for "Round Liner" – it is a special configuration of 4 needles in a square cluster. Each needle is 0.35mm in diameter so the overall dimension of the 4RL needle is 0.7mm square. Tattoo needles, like this, are not measured in "gauges" like hypodermic needles – but 0.7mm is equivalent to a 22 gauge needle.

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