

May 13, 2019

## U Michigan - Hind Paw Withdrawal for Rodents

DOI

[dx.doi.org/10.17504/protocols.io.x67frhn](https://dx.doi.org/10.17504/protocols.io.x67frhn)



Eva Feldman<sup>1</sup>

<sup>1</sup>University of Michigan - Ann Arbor

Mouse Metabolic Phenotyping Centers  
Tech. support email: [info@mmpc.org](mailto:info@mmpc.org)



Lili Liang

OPEN  ACCESS



DOI: [dx.doi.org/10.17504/protocols.io.x67frhn](https://dx.doi.org/10.17504/protocols.io.x67frhn)

External link: <https://mmpc.org/shared/document.aspx?id=318&docType=Protocol>

**Protocol Citation:** Eva Feldman 2019. U Michigan - Hind Paw Withdrawal for Rodents. **protocols.io**  
<https://dx.doi.org/10.17504/protocols.io.x67frhn>

**License:** This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

**Protocol status:** Working

**We use this protocol and it's working**

**Created:** February 15, 2019

**Last Modified:** May 13, 2019

**Protocol Integer ID:** 20415

**Keywords:** Rodent hind paw, pathology present in the nervous system

## Abstract

### Summary:

This protocol measures and quantifies the pain in rodent hind paw. These measurements can be used to evaluate the pathology present in the nervous system.

## Materials

### Reagent/Material

1. IITC Model 336 Plantar/Tail Analgesic Meter with True tail Temp and Heated Glass
2. HP laser printer
3. Mouse restraint
4. #2 Phillips screwdriver
5. Power strip
6. Foot switch
7. Plastic mouse chamber
8. Black Sharpie

## Set up

- 1
  - Must clean equipment with sporekrenz before entering the animal room
  - All restrainers need to be exclusively used in same room. If restrainer has been in another animal room, it CANNOT be used!
  - The True Tail Temp cannot be used for the paw test. It must be disabled. Press 6000E on keypad of CPU. It is on by default.
  - Test Head needs to be removed from Tail Flick machine and placed under heated glass.
  - Never remove cable from test head or back of tail flick machine when it is on. Failure to pay attention may damage electrical circuits in machine.

## Instrument Instructions:

- 2 Keyboard commands ///There are 7 commands/// \\number plus E shows the setting of the function\\\
  - 1) #1 – Current Temperature (1E shows temp
  - 2) #2–animalnumbere.g.2011Eforanimal11
  - 3) #3 – Active Intensity (During Test) e.g. 3050E for 50% intensity
  - 4) #4 – Idle Intensity (Temp during the ready state) e.g. 4050E for 50%
  - 5) #5 – Cutoff timer (Harm prevention) e.g. 5025E for 25 seconds
  - 6) #6 – Trigger Temperature (Pre-warming) \*\*\*disable\*\*\*
  - 7) #7 – Time of day (24 hr format{ 5 digit sequence}) e.g. 00100E for 1am
  - 8) #8 – Date (6 digits must be used) eg.020501 for Feb 5<sup>th</sup>, 2001

## Pre-Operating Instructions:

- 3
  - Mice need to be acclimated to the machine. This is accomplished with three 15 minute sessions per animal. The heat should be turned on medium (roughly equivalent to 32 C°) 10 minutes prior to when animals enter the box.

## Operating Instructions:

- 4
  - For first animal type 6000E, 4001E, 3015E, 5015E, and set time and date
  - Place 1 mouse in each of the 6 cubes and let settle down for 15 minutes. Once calm, set the Test Head under the paw. Use idle intensity to focus the beam properly. Use as little idle intensity as possible during to avoid additional negative conditioning.
  - There are two ways to start test. The footswitch or the red button. Hit either one and the test will begin. When the mouse moves paw, press red button or footswitch to stop test.
  - When the test ends, there will be three numbers that flash
    - P = Finish temp
    - B = Start temp
    - Blank = elapsed time

The time should be recorded only. Test is over

## Additional Notes:

- 5
  - Collecting the data can occur in two ways. After each test, the data can manually be collected or a printer can be set up to the machine and will print the data when there is one full page of data. Manual data collection is recommended at this point.
  - Record 6 measurements. Alternate between left and right feet. Wait about 10 minutes between each test.
  - Mice need to be totally calm. Data is not valid for excited mice.
  - Settings to be used
    - Active Intensity is 25%
    - Idle Intensity is 1%
    - Cutoff time is 35 seconds

**If the machine becomes confused, consult manual page 8, Troubleshooting.**