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Thermal hyperalgesia test in adult rodents

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PRECISE-TBI



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Protocol status: Working

We use this protocol and it's working

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Disclaimer

NA

Abstract

This is a protocol to describe the materials and methods utilized to perform thermal hyperalgesia in adult rats. The model utilizes an electronic hot/cold plate on which an animal is placed. The test uses an exponential method to change the temperature within the user-defined parameters.

The posting of this protocol is part of the mission of the PREclinical Interagency reSearch resourceE-TBI (PRECISE-TBI, precise-tbi.org) to improve clinical translation of therapeutics by providing an online catalog and standardized protocols to reduce the variability of model usage between laboratories.

Materials

Ugo Basile Hot/Cold Plate [RRID: SCR_025647]



- 1 Plug the device in. Turn on the device using the Power Module on the back of the device
- 2 To set up an experiment, click on "Setup"
- 3 Click on Ramp Exponential and input temperature parameters based on which test you're conducting.
 - 3.1 a. Cold: 25 to 0 degrees Celsius
 - 3.2 b. Hot: 25 to 50 degrees Celsius
- 4 Once the parameters have been set, go back to the home menu and click on the "Start" button
- 5 Click on "Reach." This allows the plate to reach the initial temperature. The temperature monitor will turn green when it has reached the preset initial temperature.
- 6 Place the animal in the apparatus with its feet down, then place the lid on.
- 7 Let the animal acclimate to the apparatus for 1 minute.
- 8 Click the "Start" button. (See: Note 1)
- 9 When you have observed a response, click the "Stop" button. (See: Note 2 and 3)
- 10 Take the animal out of the tube, place them back into their cage, and then clean the plate surface and detachable wall. (See: Note 4)
- 11 After all trials are completed, go back to the home screen and click on "Results." This will show you all the collected data. Each trial will have two sets of data, so check and make sure that each one shows up in the results.



Notes

- 12 Note 1: There is an optional foot pedal that can be used to “Start” and “Stop” the experiment
- Note 2: Responses to look for include: paw licking, jumping, lifting of hind paw, vocalization, shivering
- Note 3: Pay attention to the timer on the screen to make sure the experiment has actually stopped when you click “Stop”
- Note 4: Clean before and after every experiment trial