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Rotarod-Test for Mice

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We use this protocol and it's working

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Abstract

The Rotarod Test Protocol for Mice assesses their motor coordination and balance. Mice are trained to walk on a rotating rod in a dimly lit environment and then tested for their ability to maintain balance as the rod accelerates from 4 to 40 RPM. The test, repeated thrice with intervals, measures the latency to fall and speed at the fall. This protocol is vital to study neurological disease such as Parkinson disease.

Objective

1 To assess motor coordination and balance in mice

Apparatus

2
- A suitable Rotarod system for mice, including a rotating rod with separate lanes and fall sensors (e.g., SD Instruments or Med Associates).
- Dim red lighting for the test environment - not more the 50lux

Preparation

3
- Acclimate mice to the test environment and handler before testing.
- Bring mice in their home cage to the behavioral room at least 1 hour before testing to minimize stress.

Training

4
- The goal is for mice to be able to walk forward on the rotating rod.
- Place mice in separate lanes on the rod rotating at 5 RPM, allowing them to walk forward to maintain balance.
- After 60 seconds on the rod, return mice to their home cage.
- Clean the Rotarod with diluted ethanol between training rounds.
- Perform a total of three repetitions with a 5-minute interval.
- If a mouse falls off before completing 60 seconds, the round can be repeated, but total rounds should not exceed four.

Test Procedure

5
- Place mice in separate lanes on a rod starting at 4 RPM.
- Set the Rotarod to accelerate from 4 to 40 RPM over 300 seconds.
- The trial begins with the start of acceleration and ends when a mouse falls off the rod.
- If a mouse clings to the rod and completes a full passive rotation, the timer for that mouse is stopped.
- Return any fallen mice to their home cage, ensuring minimal disturbance to others still in the trial.
- A repeat trial is conducted if the mouse passively rotates or falls off within 5 seconds of the trial start.
- Clean the apparatus with Virkon between trials.
- Repeat the procedure for a total of three trials with a 10-minute interval between trials.

Data Analysis

6
- Record and analyze the following parameters
- Latency to fall.
- Speed at the time of fall.