JUN 09, 2023

OPEN ACCESS

DOI:
dx.doi.org/10.17504/protocols.io.kxygx3kwdg8j/v1

Protocol Citation: natalia.lopezgonzalezdelrey, Zachary Gaertner 2023. Rotarod Test to assess motor coordination in a mouse parkinsonian model. **protocols.io** https://dx.doi.org/10.17504/protocols.io.kxygx3kwdg8j/v1

Protocol status: Working
We use this protocol and it's working

Created: Jun 09, 2023

Last Modified: Jun 09, 2023

PROTOCOL integer ID: 83156

Keywords: ASAPCRN

Rotarod Test to assess motor coordination in a mouse parkinsonian model

natalia.lopezgonzalezdelrey[1], Zachary Gaertner[1]

[1]Northwestern University, Feinberg School of Medicine, Neurology Department

natalia.lopezgonzalezdelrey

ABSTRACT

Protocol for the evaluation of motor coordination in the rotarod assay in parkinsonian mice.

MATERIALS

Equipment
(76-0770) Rota Rod with Touchscreen, 5 Mice Harvard Apparatus

Consumables
- 70% ethanol (ETOH) in water solution: used to sanitize the instrument between subjects
- Paper towels
- Non-toxic markers: Sharpie® brand (red, blue, black, purple preferred)

Open Field Test

1 Total duration: 4 days

Protocol

2 Training Phase: 3 days

Testing Phase: 3 days

Training phase

3 Duration: 3 days

4 Four trials separated by at least 30 min inter-trial intervals at constant velocity.

5 Prior to placing the subjects onto the rod, confirm the trip plates are in the active position, the rod is rotating at the start speed of 4 RPM and the reset button has been clicked.
Place the mice onto the rotating rod in sequential order of rod lanes from lane 1 on the far left of the rod to lane 5. Immediately upon all mice being placed onto the rod, press the START button on the instrument panel to start the timers. As the mice fall from the rod, each lane's trip plate will stop the timer and display the latency in minutes and seconds. Once all mice in a trial have fallen and placed into their cages remove all gross urine and feces with a dry paper towel. The instrument must be thoroughly sanitized with 70% ethanol.

Test phase

6 Duration: 3 days

7 Four trials separated by at least 30 min inter-trial intervals in accelerating mode from 4 to 40 rpm in 3000s.

8 Prior to placing the subjects onto the rod, confirm the trip plates are in the active position, the rod is rotating at the start speed of 0 RPM and the reset button has been clicked.
Place the mice onto the rotating rod in sequential order of rod lanes from lane 1 on the far left of the rod to lane 5. Immediately upon all mice being placed onto the rod, press the START button on the instrument panel to start the timers. As the mice fall from the rod, each lane's trip plate will stop the timer and display the latency in minutes and seconds. Once all mice in a trial have fallen and placed into their cages remove all gross urine and feces with a dry paper towel. The instrument must be thoroughly sanitized with 70% ethanol.

Analysis

9 Latency of fall. The cumulative time (seconds) the subject maintains its balance on the rotarod prior to falling off of the rod. The maximum latency is set at 300 seconds per trial.

The analysis should cover the latency of fall (when applies):
- by day
- by phase
- by group: control vs parkinsonian
- by treatment: control vs l-dopa