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Rodent Gait Analysis Using Linear Track Protocol

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Protocol status: Working

We use this protocol and it's working

Created: September 19, 2024

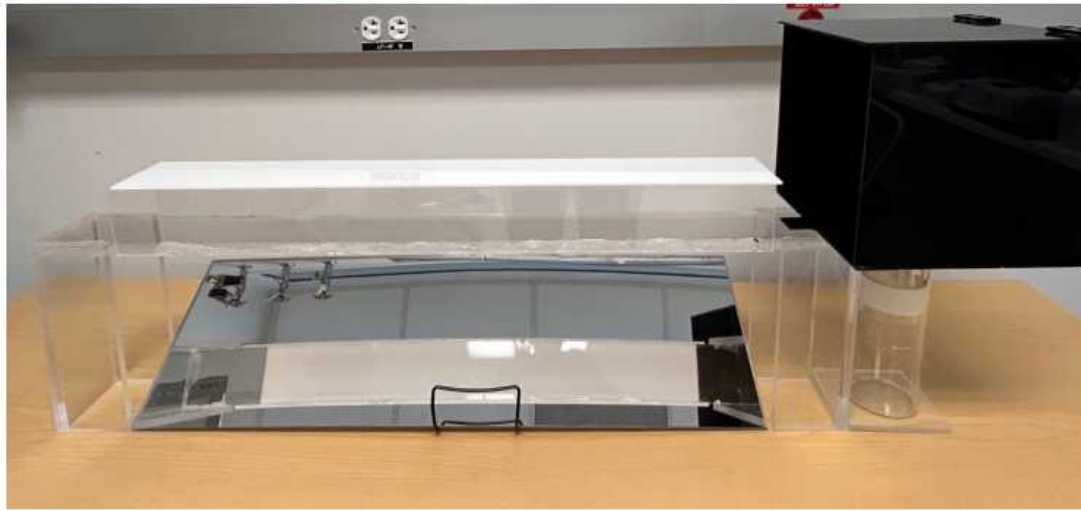
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Abstract

This protocol is used to evaluate quantitative aspects of mouse locomotor behavior (gait).



Materials

Supplies:

- Home-made catwalk apparatus consisting of clear acrylic walking corridor (33 inches long x 3.25 inches wide) on an acrylic stand (8.25 inches high - which are glued to the side of the base).
- Home-made black acrylic "home" box (8 inches width/ 8 inches length/ 8 inches height).
- Bedding and enrichment (placed in black "home" box to entice mouse to walk).
- Mirror (26.5 inches long x 8.5 inches wide) placed underneath the catwalk.
- High-speed camera (60 fps or higher) pointed at mirror.

Setup:

- Clean apparatus with 70% ethanol between animals.
- Replace bedding/enrichment in the black "home" box.



Procedure

- 1 There is no need to habituate mice to the apparatus; mice will walk across voluntarily to enter the black box.
- 2 Start video recording.
- 3 Place mouse on open end of the catwalk; observe to make sure mouse walks towards the black “home” box.
- 4 When mouse reaches “home” box, stop video recording.
- 5 Remove mouse from “home” box and re-place on the open end.
- 6 Repeat this process 4-5 times (or until mouse stops traversing catwalk). A greater number of trials yields a higher number of strides for subsequent analysis.
- 7 After final trial, return mouse to home cage.
- 8 Data can be analyzed by following the steps described in: <https://github.com/UCSF-Nelson-Lab/Catwalk-Analysis>