Rotarod JAX_ROT_001

Purpose

To assess motor co-ordination, motor learning, and balance phenotype in rodents.

Description:

MP:0001516 Abnormal motor coordination/ balance

MP:0002804 Abnormal motor learning

Experimental Design

- **Minimum number of animals :** 7M + 7F
- **Age at test:** Week 11
- **Sex:** We would expect the results of this test to show sexual dimorphism

Procedure

The Rotarod is equipped with a 70mm diameter rat adaptor and covered with automotive wet or dry 320 grit sandpaper or equivalent. Sandpaper is applied with rubber cement, ensuring that no gap remains between the paper and the rod dividers.

1. Mice are allowed to acclimatise to the phenotyping room for a period of 30 minutes prior to testing.
2. Mice are tested for 5 trials with an acceleration of 20 rpm/min.
3. On each trial mice are placed in separate compartments of the rotating rod.
4. The latency to fall into the tray for each mouse is recorded by photobeam break.
5. Mice remain in tray for the remainder of the trial.
6. A 30 s intertrial interval begins after the last mouse falls.
7. Equipment will be cleaned between tests using unscented 1% Virkon S.

Notes

Fusion software data output per trial per mouse. (5 trials 4 mice per trial)

Learning slope is obtained as a regression slope using the duration over the five trials as shown below. Log transformation could be used to linearize the data prior to obtaining a slope.

A description of what local QC should be undertaken, and in addition what the DCC should do.

Failure to stay on wheel at start of test-coordination issues, mice may hold any damaged edges of the sandpaper, equipment fault (Ex. Servo Reset error), Trial interrupted, and calibration/recording errors are possible reasons to exclude data point from analysis. All trial error will be shown as ServoReset or N/A in the outcome column.

If any values in a derived field are missing field it is scored as Null.

Parameters and Metadata

Latency to fall JAX_ROT_001_001 | v1.0

seriesParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Unit Measured: s

Increments: 1, 2, 3, 4, 5,

Average duration JAX_ROT_002_001 | v1.4

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: s

Derivation: meanOfIncrements('JAX_ROT_001_001', 5)

Learning difference JAX_ROT_003_001 | v1.3

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: s

Learning slope JAX_ROT_004_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: s/trial

Time of test JAX_ROT_005_001 | v1.1

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

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Chamber JAX_ROT_006_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: 1, 2, 3, 4,

Experimenter ID JAX_ROT_008_001 | v1.1

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

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Diameter of rod JAX_ROT_009_001 | v1.1

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: mm

Options: 70,

Material of rod cover JAX_ROT_010_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: 320 grit sandpaper,

Start speed JAX_ROT_011_001 | v1.2

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: rpm

Options: 0, 4,

Acceleration JAX_ROT_012_001 | v1.3

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: rpm

Max trial duration JAX_ROT_013_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: min

Options: 5,

Equipment ID JAX_ROT_014_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Equipment manufacturer JAX_ROT_015_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Options: Accuscan, Med Associates,

Equipment model JAX_ROT_016_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Options: Fusion, SOF-ENV-575,