Von Frey Test JAX_VFR_001

Purpose

To investigate mechanical sensitivity in wild type and genetically altered mice.

Experimental Design

Minimum number of mutant animals: 7 males + 7 females

Age at test: 17 weeks

Sexual dimorphism:

Procedure

1. Baseline measurement
   1. Set up the testing room and equipment. Check the condition of the von Frey filaments.
   2. Place mice into the testing arenas and leave them to habituate for the specified length of time.
   3. Once habituated, test the mouse with the starting filament. When the mouse has all four feet on the platform, position the starting filament below the mid-plantar surface of the foot.
   4. Press the filament against the foot until the filament bends. Hold the filament in position for 3 seconds, or until the mouse moves its foot.
   5. Mark the response as '0' if the mouse does not react, or 'X' if it does react to the filament.
   6. Move on to testing the next mouse with the starting filament.
   7. Once all mice have been tested with the starting filament, test them with the next filament.
      • If the mice did respond to the previous filament, they should be tested with the filament of the next smallest size. Once tested, record the response.
      • If the mice did not respond to the previous filament, they should be tested with the filament of the next largest size. Once tested, record the response.
   9. Continue testing the mice using the up-down pattern until the stated number of trials have been completed.

3. Challenge
   1. The challenge should be administered 24 hours after the baseline measurement took place.
   2. Prepare the challenge injection.
   3. Anaesthetise the mouse.
   4. Administer the challenge to the plantar surface of the right hind paw.
   5. Monitor the condition of the mouse as it recovers from the anaesthetic.

5. Test 1
1. 24 hours after the challenge injection, re-test the mouse with the von Frey filaments using the same procedure as described for the baseline measurement.

7. **Test 2**
   1. 48 hours after the challenge injection, re-test the mouse with the von Frey filaments using the same procedure as described for the baseline measurement.

**Notes**

This procedure is a pilot study from the Pain Phenotyping Pilot

**Parameters and Metadata**

**Baseline: tabulation**

Baseline: final filament (target force)  
Baseline: 50% threshold (grams)
Baseline: 50% threshold (log scaled) JAX_VFR_004_001 | v1.0


Test 1: tabulation JAX_VFR_005_001 | v1.0


Test 1: final filament (target force) JAX_VFR_006_001 | v1.0

Unit Measured: g

Test 1: 50% threshold (grams) JAX_VFR_007_001 | v1.0

Unit Measured: g

Test 1: 50% threshold (log scaled) JAX_VFR_008_001 | v1.0

Test 2: tabulation JAX_VFR_009_001 | v1.0

Test 2: final filament (target force) JAX_VFR_010_001 | v1.0

Test 2: 50% threshold (grams) JAX_VFR_011_001 | v1.0
Test 2: 50% threshold (log scaled)  JAX_VFR_012_001 | v1.0

Options: CFA (30 ul, undiluted),

Site of challenge injection  JAX_VFR_014_001 | v1.0

Options: Plantar surface of right hind paw,
**General anaesthetic for challenge injection** JAX_VFR_015_001 | v1.0

*procedureMetadata*

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

Options: Isoflurane,

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**Number of runs per test** JAX_VFR_016_001 | v1.0

*procedureMetadata*

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

Options: 1,

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**Number of trials per run** JAX_VFR_017_001 | v1.0

*procedureMetadata*

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

Options: Minimum of 6 (at least 2 changes in response recorded),
Minimum interval between filament presentation  JAX_VFR_01
8_001 | v1.0
procedureMetadata


Unit Measured: min

Options: 2,

Number of repeats with same filament  JAX_VFR_019_001 | v1.0
procedureMetadata


Options: Once, if response unclear repeat up to 2 times,

Minimum acclimatisation period  JAX_VFR_020_001 | v1.0
procedureMetadata


Unit Measured: Hours

Options: 1,
**Paws tested** JAX_VFR_021_001 | v1.0

**Options:** Right hind paw,

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**Time between baseline measurement and challenge** JAX_VF R_022_001 | v1.0

**Unit Measured:** Hours

**Options:** 24,

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**Time between challenge and test 1** JAX_VFR_023_001 | v1.0

**Unit Measured:** Hours

**Options:** 24,
Time between challenge and test 2  JAX_VFR_024_001 | v1.0

**procedureMetadata**

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

**Unit Measured:** Hours

**Options:** 48,

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Tetrad manufacturer  JAX_VFR_025_001 | v1.0

**procedureMetadata**

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

**Options:** Ugo Basile,

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Tetrad dimensions  JAX_VFR_026_001 | v1.0

**procedureMetadata**

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

**Unit Measured:** cm

**Options:** 12.7 cm H x 10.16 cm W x 10.16 cm L,

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Tetrad material  JAX_VFR_027_001 | v1.0
**Tetrad colour/opacity** JAX_VFR_028_001 | v1.0

Options: Acrylic,
Options: Grey,

Grid material  JAX_VFR_031_001  | v1.0

procedureMetadata


Options: Metal,

Grid hole size  JAX_VFR_032_001  | v1.0

procedureMetadata


Unit Measured: mm

Options: 5 mm x 5 mm,

Filament set manufacturer  JAX_VFR_033_001  | v1.0

procedureMetadata


Options: Stoetling,
Filament set model JAX_VFR_034_001 | v1.0

Options: Touch test sensory probes (Item #58011),

Filament material JAX_VFR_035_001 | v1.0

Options: Nylon,

Range of filaments used (target force) JAX_VFR_036_001 | v1.0

Unit Measured: g
Options: 0.008 - 4,
Starting filament (target force) JAX_VFR_037_001 | v1.0

Unit Measured: g

Options: 0.4,

Date filaments last calibrated JAX_VFR_038_001 | v1.0

Experimenter ID JAX_VFR_039_001 | v1.0

Disinfectant JAX_VFR_040_001 | v1.0

Options: 70% ethanol,
Delta2: difference in log10 threshold (g)  JAX_VFR_041_001 | v1.0

simpleParameter


Unit Measured: g

Derivation: sub('JAX_VFR_004_001','JAX_VFR_012_001')