Von Frey Test UCD_VFR_001

Purpose

To detect mechanical/tactile sensitivity in the mouse paw

Experimental Design

Minimum number of mutant animals: 7 males + 7 females

Age at test: 16 weeks

Sexual dimorphism:

Procedure

1. Baseline measurement
   1. Move the mice to the testing chambers and leave to acclimate for the specified length of time.
   2. Mice should be tested using the simplified up-down method (SUDO) of Bonin et al. (2014).
   3. When the mouse is still, apply the filament to the centre of the right hindpaw. Press the filament against the paw until it bends, then release.
   4. Mark the response '0' if the mouse does not react, or 'X' if it does react to the filament.
   5. Leave the mouse for a minimum of 2 minutes before presentation of the next filament.
   6. The next filament to be tested will depend on the response to the previous 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.
   8. Continue testing the mice until 5 trials have been completed.

3. Challenge
   1. The challenge is administered after the baseline measurement has been completed.

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. 144 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

**Tetrad material** UCD_VFR_030_001 | v1.0

Options: Plexiglass,

---

**Test 1: final score** UCD_VFR_007_001 | v1.0

Increments: Minimum 1

---

**Filament set manufacturer** UCD_VFR_036_001 | v1.0

Options: Aesthesio, Stoetling,
Grid material **UCD_VFR_034_001 | v1.0**

**procedureMetadata**

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

Options: Black painted metal,

---

Test 2: average PWT force **UCD_VFR_015_001 | v1.0**

**simpleParameter**

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

Unit Measured: g

Derivation: `meanOfIncrements('UCD_VFR_014_001',1)`

---

Inset colour/opacity **UCD_VFR_033_001 | v1.0**

**procedureMetadata**

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

Options: Clear, White,
Tetrad manufacturer  UCD_VFR_028_001 | v1.0

Procedure metadata


Options: IITC,

General anaesthetic for challenge injection  UCD_VFR_018_001 | v1.0

Procedure metadata


Options: Isoflurane,

Challenge  UCD_VFR_016_001 | v1.0

Procedure metadata


Options: CFA,

Time between baseline measurement and challenge  UCD_VFR_025_001 | v1.0

Procedure metadata
Test 1: tabulation  
**UCD_VFR_006_001 | v1.0**

seriesParameter

Increments: Minimum 1

Test 2: average final score  
**UCD_VFR_013_001 | v1.0**

simpleParameter

Derivation: meanOfIncrements('UCD_VFR_012_001',1)

Time between challenge and test 1  
**UCD_VFR_026_001 | v1.0**

procedureMetadata
Unit Measured: Hours

Options: 24, 22,

Site of challenge injection UCD_VFR_017_001 | v1.0

procedureMetadata


Options: Plantar surface of right hindpaw,

Baseline: average PWT force UCD_VFR_005_001 | v1.0

simpleParameter


Unit Measured: g

Derivation: meanOfIncrements('UCD_VFR_004_001',1)

Time between challenge and test 2 UCD_VFR_027_001 | v1.0

procedureMetadata

Unit Measured: Hours
Options: 144, 142,

Experimenter ID UCD_VFR_043_001 | v1.0

Test 1: average final score UCD_VFR_008_001 | v1.0
Derivation: meanOfIncrements('UCD_VFR_007_001',1)

Range of filaments used (target force) UCD_VFR_039_001 | v1.0
Unit Measured: g
Options: 0.02 - 1.4,
**Paws tested** UCD_VFR_024_001 | v1.0

procedureMetadata

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

Options: Right hindpaw,

**Disinfectant** UCD_VFR_044_001 | v1.0

procedureMetadata

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

Options: Clidox/Ethanol, Quaternary Ammonia (Coverage Plus),

**Baseline: average final score** UCD_VFR_003_001 | v1.0

simpleParameter

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

Derivation: meanOfIncrements('UCD_VFR_002_001',1)

**Inset material** UCD_VFR_032_001 | v1.0

procedureMetadata
Number of trials per run UCD_VFR_020_001 | v1.0
Options: 5,

Testing methodology UCD_VFR_047_001 | v1.0
Options: SUDO,

Minimum interval between filament presentation UCD_VFR_021_001 | v1.0
Options: Plexiglass,
Unit Measured: min

Options: 2,

---

**Tetrad dimensions** UCD_VFR_029_001 | v1.0

procedureMetadata


Unit Measured: cm

Options: 12.5 cm H x 10 cm W x 10 cm L,

---

**Tetrad colour/opacity** UCD_VFR_031_001 | v1.0

procedureMetadata


Options: Clear,

---

**Date filaments last calibrated** UCD_VFR_042_001 | v1.0

procedureMetadata

Starting filament (target force) UCD_VFR_040_001 | v1.0

Unit Measured: g

Options: 0.16,

Test 2: PWT force UCD_VFR_014_001 | v1.0

Unit Measured: g

Increments: Minimum 1

Filament material UCD_VFR_038_001 | v1.0

Options: Nylon,
Baseline: final score  
*UCD_VFR_002_001 | v1.0*

- **Series Parameter**
  - **Req. Analysis**: false  
  - **Req. Upload**: true  
  - **Is Annotated**: false
  - **Increments**: Minimum 1

Scaling parameter B  
*UCD_VFR_046_001 | v1.0*

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

Filament set model  
*UCD_VFR_037_001 | v1.0*

- **Procedure Metadata**
  - **Req. Analysis**: false  
  - **Req. Upload**: true  
  - **Is Annotated**: false
  - **Options**: Aesthesio Precise Tactile Sensory Evaluator 20 piece kit,

Test 1: average PWT force  
*UCD_VFR_010_001 | v1.0*

- **Simple Parameter**
  - **Req. Analysis**: false  
  - **Req. Upload**: false  
  - **Is Annotated**: false
Unit Measured: g

Derivation: meanOfIncrements('UCD_VFR_009_001', 1)

Number of repeats with same filament UCD_VFR_022_001 | v1.0

Options: Once, 2-3, if response not obvious in first 2 then 3rd performed,

Test 1: PWT force UCD_VFR_009_001 | v1.0

Unit Measured: g

Increments: Minimum 1

Baseline: tabulation UCD_VFR_001_001 | v1.0

Increments: Minimum 1
Baseline: PWT force  UCD_VFR_004_001 | v1.0

seriesParameter


Unit Measured: g

Increments: Minimum 1

Grid hole size  UCD_VFR_035_001 | v1.0

procedureMetadata


Unit Measured: mm

Options: Hexagonal 8 mm corner to corner,

Scaling parameter X  UCD_VFR_045_001 | v1.0

procedureMetadata

Minimum acclimatisation period UCD_VFR_023_001 | v1.0

**procedureMetadata**


Unit Measured: Hours

Options: 1,

---

Test 2: final score UCD_VFR_012_001 | v1.0

**seriesParameter**


Increments: Minimum 1

---

Number of runs per test UCD_VFR_019_001 | v1.0

**procedureMetadata**


Options: 2, 1,

---

Starting filament (filament number) UCD_VFR_041_001 | v1.0

**procedureMetadata**
Test 2: tabulation  UCD_VFR_011_001 | v1.0

seriesParameter

Delta1: difference in log10 threshold(g)  UCD_VFR_048_001 | v1.0

simpleParameter

Delta2: difference in log10 threshold (g)  UCD_VFR_049_001 | v1.0

simpleParameter