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

Parameters and Metadata


Options: Plexiglass

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

Series Parameter


Increments: Minimum 1

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

Parameters and Metadata


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

**Options:** Black painted metal,

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

**Unit Measured:** g

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

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

**Options:** Clear, White,

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**Tetrad manufacturer** UCD_VFR_028_001 | v1.0
General anaesthetic for challenge injection  

**UCD_VFR_018_001**

| v1.0 |

[procedureMetadata]

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

**Options:** Isoflurane,

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**Challenge**  

**UCD_VFR_016_001** | v1.0

[procedureMetadata]

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

**Options:** CFA,

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**Time between baseline measurement and challenge**  

**UCD_VFR_025_001** | v1.0

[procedureMetadata]

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

**Unit Measured:** Hours

**Options:** 2, 1,
Test 1: tabulation  
UDC_VFR_006_001 | v1.0

seriesParameter

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

Increments: Minimum 1

Test 2: average final score  
UDC_VFR_013_001 | v1.0

simpleParameter

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

Derivation: meanOfIncrements('UCD_VFR_012_001',1)

Time between challenge and test 1  
UDC_VFR_026_001 | v1.0

procedureMetadata

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

Unit Measured: Hours

Options: 24, 22,

Site of challenge injection  
UDC_VFR_017_001 | v1.0

procedureMetadata
Options: Plantar surface of right hindpaw,

Baseline: average PWT force UCD_VFR_005_001 | v1.0

Unit Measured: g
Derivation: meanOfIncrements('UCD_VFR_004_001',1)

Time between challenge and test 2 UCD_VFR_027_001 | v1.0

Unit Measured: Hours
Options: 144, 142,

Experimenter ID UCD_VFR_043_001 | v1.0
Test 1: average final score  

simpleParameter

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

Derivation: meanOfIncrements('UCD_VFR_007_001',1)

Range of filaments used (target force)  

procedureMetadata

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

Unit Measured: g

Options: 0.02 - 1.4,

Paws tested  

procedureMetadata

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

Options: Right hindpaw,

Disinfectant  

procedureMetadata

 Req. Analysis: false  
Req. Upload: true  
Is Annotated: false
Options: Clidox/Ethanol, Quaternary Ammonia (Coverage Plus),

Baseline: average final score UCD_VFR_003_001 | v1.0
 Derivation: meanOfIncrements('UCD_VFR_002_001',1)

Inset material UCD_VFR_032_001 | v1.0
 Options: Plexiglass,

Number of trials per run UCD_VFR_020_001 | v1.0
 Options: 5,
Testing methodology UCD_VFR_047_001 | v1.0

ProcedureMetadata


Options: SUDO,

Minimum interval between filament presentation UCD_VFR_021_001 | v1.0

ProcedureMetadata


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
Date filaments last calibrated  

**UCD_VFR_042_001 | v1.0**

**Unit Measured:** g

**Options:** 0.16,
Filament material UCD_VFR_038_001 | v1.0

Options: Nylon,

Baseline: final score UCD_VFR_002_001 | v1.0

Increments: Minimum 1

Scaling parameter B UCD_VFR_046_001 | v1.0

Filament set model UCD_VFR_037_001 | v1.0
Options: Aesthesia Precise Tactile Sensory Evaluator 20 piece kit,

Test 1: average PWT force  UCD_VFR_010_001 | v1.0


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
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<thead>
<tr>
<th>Baseline: tabulation</th>
<th>UCD_VFR_001_001</th>
<th>v1.0</th>
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<tr>
<td>Is Annotated:</td>
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<td>Increments:</td>
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<table>
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<th>Baseline: PWT force</th>
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<tr>
<td>Is Annotated:</td>
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<td>Unit Measured:</td>
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<td>Increments:</td>
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<table>
<thead>
<tr>
<th>Grid hole size</th>
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<td>Req. Upload:</td>
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<td>Is Annotated:</td>
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<tr>
<td>Unit Measured:</td>
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<tr>
<td>Options:</td>
<td>Hexagonal 8 mm corner to corner,</td>
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Scaling parameter X UCD_VFR_045_001 | v1.0

Procedure Metadata


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Minimum acclimatisation period UCD_VFR_023_001 | v1.0

Procedure Metadata


Unit Measured: Hours

Options: 1,

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Test 2: final score UCD_VFR_012_001 | v1.0

Series Parameter


Increments: Minimum 1

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Number of runs per test UCD_VFR_019_001 | v1.0

Procedure Metadata


Options: 2, 1,
Starting filament (filament number) UCD_VFR_041_001 | v1.0

procedureMetadata


Options: 5,

Test 2: tabulation UCD_VFR_011_001 | v1.0

seriesParameter


Increments: Minimum 1

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

simpleParameter


Derivation: sub(log10('UCD_VFR_004_001'),log10('UCD_VFR_009_001'))

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

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Derivation: sub(log10('UCD_VFR_004_001'), log10('UCD_VFR_014_001'))