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

*procedureMetadata*

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

**Options:** Plexiglass,

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

*seriesParameter*

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

**Increments:** Minimum 1

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

*procedureMetadata*

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

**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**

*procedureMetadata*

- **Req. Analysis:** false  
- **Req. Upload:** true  
- **Is Annotated:** false
General anaesthetic for challenge injection  UCD_VFR_018_001  | v1.0
procedureMetadata


Options: Isoflurane,
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

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  UCD_VFR_008_001  | v1.0

simpleParameter


Derivation: meanOfIncrements('UCD_VFR_007_001',1)

Range of filaments used (target force)  UCD_VFR_039_001  | v1.0

procedureMetadata


Unit Measured: g

Options: 0.02 - 1.4,

Paws tested  UCD_VFR_024_001  | v1.0

procedureMetadata


Options: Right hindpaw,

Disinfectant  UCD_VFR_044_001  | v1.0

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

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

*simpleParameter*

Derivation: meanOfIncrements('UCD_VFR_002_001',1)

**Inset material** UCD_VFR_032_001 | v1.0

*procedureMetadata*

Options: Plexiglass,

**Number of trials per run** UCD_VFR_020_001 | v1.0

*procedureMetadata*

Options: 5,
Testing methodology  

Minimum interval between filament presentation  

Tetrad dimensions  

Tetrad colour/opacity
Date filaments last calibrated  UCD_VFR_042_001 | v1.0

Starting filament (target force)  UCD_VFR_040_001 | v1.0

Test 2: PWT force  UCD_VFR_014_001 | v1.0
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**: Aesthesio Precise Tactile Sensory Evaluator 20 piece kit,

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

*simpleParameter*

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

**Unit Measured**: g  
**Derivation**: meanOfIncrements('UCD_VFR_009_001',1)

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**Number of repeats with same filament**  
UCD_VFR_022_001 | v1.0

*procedureMetadata*

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

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

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**Test 1: PWT force**  
UCD_VFR_009_001 | v1.0

*seriesParameter*

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

**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


Unit Measured: g

Increments: Minimum 1

Grid hole size UCD_VFR_035_001 | v1.0


Unit Measured: mm

Options: Hexagonal 8 mm corner to corner,
Scaling parameter X  UCD_VFR_045_001 | v1.0

Required Analysis: false  Required Upload: true  Is Annotated: false

Minimum acclimatisation period  UCD_VFR_023_001 | v1.0

Required Analysis: false  Required Upload: true  Is Annotated: false

Unit Measured: Hours
Options: 1,

Test 2: final score  UCD_VFR_012_001 | v1.0

Required Analysis: false  Required Upload: true  Is Annotated: false

Increments: Minimum 1

Number of runs per test  UCD_VFR_019_001 | v1.0

Required Analysis: false  Required Upload: true  Is Annotated: false

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: \( \text{sub}(\log_{10}(\text{UCD_VFR_004_001}),\log_{10}(\text{UCD_VFR_009_001})) \)

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


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