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

A simplified up-down method (SUDO) for measuring mechanical nociception in rodents using von Frey filaments. Bonin RP, Bories C, De Koninck Y. Mol Pain. 2014 Apr 16;10:26. doi: 10.1186/1744-8069-10-26.PMID:24739328

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

Options: IITC,

General anaesthetic for challenge injection UCD_VFR_018_001 | v1.0

procedureMetadata

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

Options: Isoflurane,

Challenge UCD_VFR_016_001 | v1.0

procedureMetadata

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

Options: CFA,

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 UCD_VFR_006_001 | v1.0

seriesParameter

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

Increments: Minimum 1

Test 2: average final score UCD_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 UCD_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 UCD_VFR_017_001 | v1.0

procedureMetadata

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

Options: Plantar surface of right hindpaw,

Baseline: average PWT force UCD_VFR_005_001 | v1.0

simpleParameter

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

Unit Measured: g

Derivation: meanOfIncrements('UCD_VFR_004_001',1)

Time between challenge and test 2 UCD_VFR_027_001 | v1.0

procedureMetadata

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

Unit Measured: Hours

Options: 144, 142,

Experimenter ID UCD_VFR_043_001 | v1.0

procedureMetadata

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

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Test 1: average final score UCD_VFR_008_001 | v1.0

simpleParameter

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

Derivation: meanOfIncrements('UCD_VFR_007_001',1)

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

procedureMetadata

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

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

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

Options: Plexiglass,

Number of trials per run UCD_VFR_020_001 | v1.0

procedureMetadata

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

Options: 5,

Testing methodology UCD_VFR_047_001 | v1.0

procedureMetadata

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

Options: SUDO,

Minimum interval between filament presentation UCD_VFR_021_001 | v1.0

procedureMetadata

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

Unit Measured: min

Options: 2,

Tetrad dimensions UCD_VFR_029_001 | v1.0

procedureMetadata

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

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

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

Options: Clear,

Date filaments last calibrated UCD_VFR_042_001 | v1.0

procedureMetadata

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

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Starting filament (target force) UCD_VFR_040_001 | v1.0

procedureMetadata

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

Unit Measured: g

Options: 0.16,

Test 2: PWT force UCD_VFR_014_001 | v1.0

seriesParameter

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

Unit Measured: g

Increments: Minimum 1

Filament material UCD_VFR_038_001 | v1.0

procedureMetadata

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

Options: Nylon,

Baseline: final score UCD_VFR_002_001 | v1.0

seriesParameter

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

Increments: Minimum 1

Scaling parameter B UCD_VFR_046_001 | v1.0

procedureMetadata

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

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Filament set model UCD_VFR_037_001 | v1.0

procedureMetadata

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

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)

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

seriesParameter

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

Increments: Minimum 1

Baseline: PWT force UCD_VFR_004_001 | v1.0

seriesParameter

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

Unit Measured: g

Increments: Minimum 1

Grid hole size UCD_VFR_035_001 | v1.0

procedureMetadata

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

Unit Measured: mm

Options: Hexagonal 8 mm corner to corner,

Scaling parameter X UCD_VFR_045_001 | v1.0

procedureMetadata

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

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Minimum acclimatisation period UCD_VFR_023_001 | v1.0

procedureMetadata

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

Unit Measured: Hours

Options: 1,

Test 2: final score UCD_VFR_012_001 | v1.0

seriesParameter

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

Increments: Minimum 1

Number of runs per test UCD_VFR_019_001 | v1.0

procedureMetadata

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

Options: 2, 1,

Starting filament (filament number) UCD_VFR_041_001 | v1.0

procedureMetadata

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

Options: 5,

Test 2: tabulation UCD_VFR_011_001 | v1.0

seriesParameter

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

Increments: Minimum 1

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

simpleParameter

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

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

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

simpleParameter

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

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