Hargreaves Test JAX_HRG_001

Purpose
To assess thermal hyperalgesia in the mouse paw.

Experimental Design
Minimum number of mutant animals: 7 males + 7 females
Age at test: either 8 weeks or 17 weeks
Sexual dimorphism:

Procedure
1. Baseline measurement
   1. Transfer mouse to the testing arena and allow to acclimate to the test environment.
   2. Ensure that the intensity and cut-off timer of the radiant heat source are set correctly.
   3. Position the light source below the platform and directed at the correct part of the paw.
   4. Turn the light source on and record the latency to paw withdrawal. The stimulus is terminated once a response is registered, or if the maximum exposure time is reached before the animal responds.
   5. Repeat the test so that each mouse is tested three times with the same paw.
2. Challenge
   1. The challenge is administered after the baseline measurement has been completed.
   2. Anaesthetise the mouse and administer the challenge injection.
3. Test 1
   1. After the specified length of time since the challenge injection, the mouse is re-tested using the same procedure as described for the baseline measurement.
4. Test 2
   1. After the specified length of time since the challenge injection, the mouse is re-tested again 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: latency to withdrawal  JAX_HRG_001_001  | v1.0

seriesParameter


Unit Measured: s

Increments: 1, 2, 3,

Baseline: average latency to withdrawal  JAX_HRG_002_001  | v1.0

simpleParameter


Unit Measured: s

Derivation: meanOfIncrements('JAX_HRG_001_001',1)

Test 1: latency to withdrawal  JAX_HRG_003_001  | v1.0

seriesParameter


Unit Measured: s

Increments: 1, 2, 3,
Test 1: average latency to withdrawal  JAX_HRG_004_001 | v1.0
simpleParameter


Unit Measured: s

Derivation: meanOfIncrements('JAX_HRG_003_001',1)

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Test 2: latency to withdrawal  JAX_HRG_005_001 | v1.0
seriesParameter


Unit Measured: s

Increments: 1, 2, 3,
Length of acclimatisation period

- **Required Analysis**: false
- **Required Upload**: true
- **Is Annotated**: false
- **Unit Measured**: min
- **Options**: 30, 30-60, 60

Glass base heated during acclimatisation

- **Required Analysis**: false
- **Required Upload**: true
- **Is Annotated**: false
- **Options**: Yes

Maximum exposure time

- **Required Analysis**: false
- **Required Upload**: true
- **Is Annotated**: false
- **Unit Measured**: s
- **Options**: 20, 30
**Number of repeats per paw**  JAX_HRG_010_001 | v1.0

*procedureMetadata*

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

**Options:** Right hind paw tested 3 times,

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**Minimum time between stimulus presentation**  JAX_HRG_011_001 | v1.0

*procedureMetadata*

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

**Unit Measured:** min

**Options:** 2,

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**Challenge**  JAX_HRG_012_001 | v1.0

*procedureMetadata*

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

**Options:** CFA,
**Site of challenge injection**  
JAX_HRG_013_001 | v1.0

**Options:** Plantar surface of right hind paw,

**Anaesthetic for challenge injection**  
JAX_HRG_014_001 | v1.0

**Options:** Isoflurane,

**Time between baseline measurement and challenge injection**  
JAX_HRG_015_001 | v1.0

**Unit Measured:** Hours

**Options:** 0.5-1, 2, 24,

**Time between challenge and test 1**  
JAX_HRG_016_001 | v1.0
Time between challenge and test 2 JAX_HRG_017_001 | v1.0

Glass base temperature: settings JAX_HRG_018_001 | v1.0
Glass base temperature: measured JAX_HRG_019_001 | v1.0

procedureMetadata


Unit Measured: C

Options: 29-32

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Idle intensity JAX_HRG_020_001 | v1.0

procedureMetadata


Unit Measured: %

Options: 2, 3, 10

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Test intensity JAX_HRG_021_001 | v1.0

procedureMetadata


Unit Measured: %

Options: 15, 25, 30, 100
**Tetrad manufacturer**  JAX_HRG_022_001 | v1.0

procedureMetadata

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

Options: IITC,

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**Tetrad material**  JAX_HRG_023_001 | v1.0

procedureMetadata

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

Options: Acrylic,

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**Tetrad colour/opacity**  JAX_HRG_024_001 | v1.0

procedureMetadata

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

Options: Clear,

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**Inset material**  JAX_HRG_025_001 | v1.0

procedureMetadata
Inset colour/opacity  JAX_HRG_026_001 | v1.0

Options: Clear, White opaque,

Lid material  JAX_HRG_027_001 | v1.0

Options: Acrylic,

Lid colour/opacity  JAX_HRG_028_001 | v1.0

Options: Clear,
Testing chamber dimensions  JAX_HRG_029_001  |  v1.0


Unit Measured: cm

Options: 12.7 cm H x 10.16 cm W x 10.16 cm L, 12.5 cm H x 10 cm W x 10 cm L,

Glass base manufacturer  JAX_HRG_030_001  |  v1.0


Options: IITC,

Glass base model  JAX_HRG_031_001  |  v1.0


Options: Model 400 Heated Base (Item #400G),
Radiant heat light source manufacturer JAX_HRG_032_001 | v1.0


Options: IITC,

Radiant heat light source model JAX_HRG_033_001 | v1.0


Options: 390 Plantar test head (Item #300TH),

Experimenter ID JAX_HRG_034_001 | v1.0


Disinfectant JAX_HRG_035_001 | v1.0

**Options:** 1% Virkon, Clidox and 70% Ethanol, Coverage Plus Working Solution,

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**Delta2: difference in latency to withdrawal** JAX_HRG_036_001 | v1 

simpleParameter

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

**Unit Measured:** s

**Derivation:**

\[ \text{sub}(\text{meanOfIncrements('JAX_HRG_001_001', 1)}, \text{meanOfIncrements('JAX_HRG_005_001', 1)}) \]