Formalin Test IMPC_FOR_001

Purpose
To assess nocifensive behaviours triggered by the inflammatory response following a formalin injection.

Experimental Design
Minimum number of mutant animals: 5 males + 5 females
Age at test: 16 weeks

Procedure
1. Acclimatise mice in the testing room for at least 30 minutes before testing.
2. Anaesthetize mouse and administer formalin with a subcutaneous injection into the plantar surface of the chosen paw.
3. Place the mouse into the testing arena and start the recording. Run the recording for up to 90 minutes.
4. Remove the mouse from the arena and clean the arena.
5. Score the behaviour of the animals for nocifensive behaviors between 10 and 60 minutes post formalin administration.

Notes
This procedure can be performed as a terminal or non-terminal procedure. If terminal, euthanize the mouse humanely after the recording.

This procedure is a pilot study from the Pain Phenotyping Pilot

Parameters and Metadata

Total duration of lick/bite behaviour IMPC_FOR_001_001 | v1.0

simpleParameter


Unit Measured: s

Derivation: sumOfIncrements('IMPC_FOR_020_001', 1)
**Total number of lick/bite events**  IMPC_FOR_002_001 | v1.0

*simpleParameter*


---

**Total duration of drag/limp behaviour**  IMPC_FOR_003_001 | v1.0

*simpleParameter*


Unit Measured: s

Derivation: sumOfIncrements('IMPC_FOR_021_001', 1)

---

**Total number of drag/limp events**  IMPC_FOR_004_001 | v1.0

*simpleParameter*


---

**Total duration of flinch behaviour**  IMPC_FOR_005_001 | v1.0

*simpleParameter*


Unit Measured: s

Derivation: sumOfIncrements('IMPC_FOR_022_001', 1)
Total number of flinch events  IMPC_FOR_006_001 | v1.0


Anaesthetic  IMPC_FOR_007_001 | v1.0


Options: Sevoflurane, Isoflurane,

Formalin Concentration  IMPC_FOR_008_001 | v1.0


Options: 5%, 2.5%,

Amount of formalin injected  IMPC_FOR_009_001 | v1.0

Unit Measured: ul
Options: 20, 30,

---

**Syringe Gauge** IMPC_FOR_010_001 | v1.0

procedureMetadata


Options: 29, 30,

---

**Site of formalin injection** IMPC_FOR_011_001 | v1.0

procedureMetadata


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

---

**Arena Manufacturer** IMPC_FOR_012_001 | v1.0

procedureMetadata


Options: In-house, IITC Life Science,
Size of testing arena IMPC_FOR_013_001 | v1.0

Options: 13cm (H) x 36cm (W) x 40cm (L), 12.7cm (H) x 21.9cm (W) x 21.59cm (L), 36cm (L) x 40cm (W) x 13cm (H),

Recording Software IMPC_FOR_014_001 | v1.0

Options: Home Cage Analyzer, Actual Analytics, Noldus Media Recorder v4,

Data scoring method IMPC_FOR_015_001 | v1.0

Options: Human scorer, from video, Neural network, from video,

Annotation Software IMPC_FOR_016_001 | v1.0

Options: Human scorer, from video, Neural network, from video,
Options: Simple Video Coder, Behavioral Observation Research Interactive Software (BORIS), In-house developed system,

------------------------------------------

Duration of observation period IMPC_FOR_017_001 | v1.0

procedureMetadata


Options: 60 minutes, 90 minutes,

------------------------------------------

Camera Position IMPC_FOR_018_001 | v1.0

procedureMetadata


Options: On the side, Below the arena,

------------------------------------------

Disinfectant IMPC_FOR_019_001 | v1.0

procedureMetadata


Options: 35% Isopropanol, Virkon 1% & 70% Ethanol, 2% Distel,
Duration of lick/bite behaviour  IMPC_FOR_020_001 | v1.0

sequenceParameter


Unit Measured: s
Increments: Minimum 1

Duration of drag/limp behaviour  IMPC_FOR_021_001 | v1.0

sequenceParameter


Unit Measured: s
Increments: Minimum 1

Duration of flinch behaviour  IMPC_FOR_022_001 | v1.0

sequenceParameter


Unit Measured: s
Increments: Minimum 1
Duration of licking/biting behavior (10-60 minutes)  IMPC_FOR_023_001 | v1.0

simpleParameter

- **Unit Measured**: s
- **Derivation**:
  \[
  \text{sum}\left(\text{incrementValue('IMPC_FOR_020_001', '10')}, \text{incrementValue('IMPC_FOR_020_001', '15')}, \text{incrementValue('IMPC_FOR_020_001', '20')}, \text{incrementValue('IMPC_FOR_020_001', '25')}, \text{incrementValue('IMPC_FOR_020_001', '30')}, \text{incrementValue('IMPC_FOR_020_001', '35')}, \text{incrementValue('IMPC_FOR_020_001', '40')}, \text{incrementValue('IMPC_FOR_020_001', '45')}, \text{incrementValue('IMPC_FOR_020_001', '50')}, \text{incrementValue('IMPC_FOR_020_001', '55')})\right)
  \]

Time per bin/increment  IMPC_FOR_024_001 | v1.0

procedureMetadata

- **Options**: 5 minutes,

Time bins excluded  IMPC_FOR_025_001 | v1.0

procedureMetadata

- **Options**: Bin/increment 0 (anaesthesia effect), None,
Experiment ID IMPC_FOR_026_001 | v1.0

procedureMetadata