

## Von Frey 電子式馮弗雷纖維細絲測試

### 1. Purpose

- 1.1 The Von Frey test is used to assess mechanical nociception. A non-anesthesia mouse is placed in a small acrylic box on a confined area of wire mesh to limit its action. When the tested mouse calms down, use a special Tip to poke its hind paw to measure the mechanical threshold which may induce withdrawal response. This service is applicable to assess the therapeutic effect of anti-inflammatory drug, and the effect of pain caused by nerve damage.

### 2. Scope

- 2.1 Individuals who have been trained, and are competent in performing the procedures described herein must follow this procedure.
- 2.2 Any queries, comments or suggestions, either relating to this SOP in general or to a specific problem encountered during a procedure, should be addressed to the Behavioural Neuroscience Project Leader.
- 2.3 Any deviances from this protocol must be reported to the Neuroscience Project Leader.

### 3. Safety Requirements

- 3.1 General laboratory procedures should be followed, which include: no eating, no chewing gum, no drinking, and no applying of cosmetics in the work area. Laboratory coats and gloves must be worn at all times in the work area, unless the protocol specifically describes the appropriate attire for the procedure.

### 4. Notes

- 4.1 The validity of results obtained from behavioural phenotyping is largely dependent on methods of animal husbandry. It is important that individuals following this procedure are experienced and aware of the animal's welfare, and be familiar with the animal being tested, in order to reduce the anxiety levels of the animal prior to testing.
- 4.2 The majority of mouse behavioural studies are age/sex/strain dependent. It is important to keep these parameters comparable throughout a single experiment.
- 4.3 Environmental factors may contribute to the levels of mouse anxiety. The temperature, humidity, ventilation, noise intensity and light intensity must be maintained at levels appropriate for mice. It is essential that the mice be kept in a uniform environment before and after testing to avoid anomalous results being obtained.
- 4.4 It is recommended that all phenotyping experimentation is conducted at approximately the same time of day because physiological and biochemical parameters change throughout the day.

### 5. Equipment

- 5.1 Commercially available von Frey apparatus (2450 Electronic Von Frey Anesthesiometer, IITC, U.S.A.).
- 5.2 Semi Flexible Polypropylene (Tip)
- 5.3 Acrylic frame with wire mesh (65cm x 21cm x 31cm)
- 5.4 A small acrylic box (10cm x 6cm x10.5cm)

## **6. Supplies**

- 6.1 Pens
- 6.2 Marker pen
- 6.3 Datasheet
- 6.4 Gloves
- 6.5 Paper mask
- 6.6 Ethanol 70%
- 6.7 Hand towels
- 6.8 Absorbent bench top
- 6.9 Sponge
- 6.10 2394 Probe, 90 gr. Range
- 6.11 0.01 inches' tungsten electrode
- 6.12 Acrylic frame
- 6.13 Wire mesh
- 6.14 Acrylic box
- 6.15 Detergent (Windex)

## **7. Procedures**

- 7.1 Minimum n=6 mice per experimental group.
- 7.2 Transport mice to the testing room in their home cages. Allow 15 minutes for the mice to acclimatise.
- 7.3 Put a tungsten electrode inside the rigid tip that is connected to the electronic von Frey unit.
- 7.4 Turn on the power and auto-zero by pressing the "clear" bottom. Then put a test weigh on the top of the rigid tip to make sure that the monitor shows 5.4g. If not, repeat the procedure again.
- 7.5 Test sensitivity of the von Frey unit by pressing the rigid tip to a hand towel to make sure the mechanical force is presented on the monitor.
- 7.6 Individual mouse is placed in a small acrylic box on the frame with wire mesh. Keep mouse in this box for 60min to acclimatise.
- 7.7 Slowly increase force to poke the hind paw until a withdrawal response (i.e. an indication that the mouse feels pain) and record the force from the monitor.
- 7.8 Wait for 3min before poking the other hind paw.
- 7.9 Total 5 applications on each hind paw are performed for a mouse.
- 7.10 Wipe clean the frame and box with detergent (Windex) and 70% ethanol.