Standard Operating Procedure	Title: Dysmorphology	
	Doc. Number: ESLIM_001_001 Rev No.	Date Issued: 01/06/04

Change Record

Revision	Date	Responsible Person	Description of Change
D1.1	20 Sept 07	Hilary Gates	Click box and observation of locomotion removed

1.0 Purpose:

1.1 A simple method to examine mice for morphological abnormalities.

2.0 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 Bone and Cartilage Research Project Leader.

2.3 Any deviances deviation from this protocol must be reported to the Bone and Cartilage Research Project Leader.

3.0 Safety Requirements:

3.1 General laboratory procedures should be followed, which include prohibition of eating, chewing gum, drinking, and 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.

4.0 Associated Documents:

4.1 EMPReSS SOP 10_002 Revision 0: Modified SHIRPA

5.0 Notes:

5.1 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 is familiar with the animal being tested, in order to reduce the anxiety levels of the animal prior to testing.

5.2 The majority of mouse behavioural studies are age/sex/strain dependent. It is important to keep these parameters comparable throughout a single experiment.

5.3 Environmental factors may contribute to the levels of anxiety within the mouse. 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.

5.4 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.

6.0 Quality Control:

7.0 Equipment:

7.1 Balance

7.2 Photo and/or video camera

8.0 Supplies:

8.1 Ruler

9.0 Procedure:

9.1 Place a cage containing 5 mice onto an operating table. **Note:** *Morphological irregularities are recorded by video sequences or photos.*

9.2 Initially observe mice carefully without disturbing them and note down the following:

9.2.1 Any obvious dysmorphologies in the physical appearance, tail kinks or coat colour.

9.3 Remove a mouse from its home cage, gripping the tail between the thumb and the forefinger and place on a balance. Determine and record its weight.

9.4 Place the mouse on the table to examine and record the following dorsally:

9.4.1 Irregularities in the shape of ears, eyes, head or limbs.

9.4.2 Number and shape of digits.

9.4.3 Irregularities in coat colour, hair distribution and development. Stroke the coat against the hair growth to note the repositioning of the hairs to their initial position as a measure of hair development.

9.4.4 Subtle kinks in the tail. Stroke the tail along its entire length with 2 fingers.

9.5 Carefully scruff the mouse, holding the tail behind the little finger, to examine and record the following ventrally:

9.5.1 Variations in coat colour.

9.5.2 Irregularities in the genitals.

9.5.3 Malformations on the ventral and lateral sides of head and body.

9.5.4 Shape, number and colour of the teeth.

9.6 Suspend the mouse by the tail for a few seconds. Observe and record the movement and positioning of the limbs.

9.7 Drop the mouse from approximately 25 cm above an empty clean cage to observe and record the position of landing.

10.0 Supporting information:

10.1 Fuchs H, Schughart K, Wolf E, Balling R, Hrabe de Angelis M, Screening for dysmorphological abnormalities--a powerful tool to isolate new mouse mutants. Mamm Genome. 2000 Jul;11(7):528-30. No abstract available.

11.0 History Review:

12.0 Emergency Procedures: