Behaviour: Elevated Plus Maze

1. Purpose

Mice are recorded with digital video equipment exploring an elevated plus maze 45 cm from the ground for 5 minutes. Behaviours sensitive to detecting fear (or anxiety) and locomotion are analysed.

The purpose of the EPM is two-fold. Primarily it is used to establish the baseline level of fearfulness. Secondly, some of the specific behaviours recorded are used to determine differences in locomotor activity.

2. Procedure

The mice are run in pairs, on the Elevated Plus maze (two mazes, one mouse in each maze) freely for 5 minutes in the dark, while being digitally video recorded by Mediacruise (2.24.000) software and data collected by the Ethovision computer software (Noldus, NL). Following each trial the mazes are cleaned with Trigene wipes.

The experimenter remains in the room during the trials and mice that are not being run are kept separately.

Use mice housed according to environmental conditions in the Behavioural Test Battery Protocol.

HOME OFFICE LICENCED PROCEDURE?:   Yes (can be delegated)

3. Materials

- Noldus Ethovision version 3.1.16 (Tracksys, Nottingham UK)
- Elevated Plus Maze with IR lighting underneath (Tracksys, Nottingham UK)
- Digital camera with IR filters (Tracksys, Nottingham UK)
- Transgene advance wipes between mice and at the beginning and end of the day, (Medichem International, Seven Oaks, UK)
- AVID chip Identification wedge reader

4. Quality Control

A panel of inbred strains are used to establish protocol. The WT mice are monitored for drift in the baseline phenotype. Video record of each mouse is recorded and archived so, if necessary, tapes can be subsequently analysed. This may be for novel analysis or for confirmatory analysis.

5. Example Data

The list of variables below are collected from each animal and downloaded into *g2c in_vivo*, the database for the behavioural data for subsequent analysis.

- for each of 3 separate zones (open arms, closed arms and central square).
    - o In zone frequency
    - o In zone total duration
    - o In zone latency of first occurrence
- distance moved total
- distance moved max

6. Supporting Information

7. Document History

This document created on 22 February 2008.

Amended: 4 March 2008