



STANDARD OPERATING PROCEDURE

TITLE: Open Field Activity Test

CATEGORY: Behavioral Assay

Introduction

Goal: This document aims to provide the reader information on how to conduct the Open Field Activity Test. The Open Field Test is a simple assessment test used to evaluate general activity levels, gross locomotor activity, and exploration habits in mice. Parameters collected include distance moved, velocity, and time spent in pre-defined zones of the arena. As this is a general description of standard materials, test settings, and procedures, variations may be made to fit specific needs.

Materials

- *Subjects:* any strain of mice. No prior training is required, though subjects should be acclimated to testing environment and experimenter before testing.
- *Apparatus:* large square box (76 x 76 x 50cm) with white floor.
- *Overhead camera:* mounted to ceiling directly above apparatus.
- *Software:* automated tracking system (ex. EthoVision).
- *Privacy blinds:* placed around apparatus to eliminate external room cues.
- *Standing lamps with white light bulbs (4):* placed at corners outside privacy blinds pointed away from apparatus.
- *Light meter:* used to measure illumination in corners of apparatus.
- *Virkon:* used between trials to eliminate visual and olfactory residue in arena.

Test Settings

- *Lighting:* comparable illumination in all four corners of apparatus.

Detailed Standard Operating Procedure

Before testing:

- *Acclimation:* subjects in home cage are placed in testing room for at least 1hr before testing to minimize effects of stress on behavior during testing.
- *Subject training:* none required.

TITLE: Open Field Activity Test	<i>Stanford Behavioral and Functional Neuroscience Laboratory</i>	
CATEGORY: Behavioral Assay	Page 2 of 2	Version 4.0

Testing procedures:

- Animal is placed in corner of arena and allowed to move freely for 10min while being monitored by automated tracking system. Trial begins immediately and ends when defined duration has elapsed.
- Animal is returned to home cage and number of fecal pellets is recorded.
- Arena is cleaned with Virkon between trials.

Data Analysis

- The following parameters are collected for analysis:
 - Distance moved
 - Mean velocity
 - Time spent in each zone (if multiple)