



# STANDARD OPERATING PROCEDURE

**TITLE: Passive Avoidance**

**CATEGORY: Behavioral Assay**

## Introduction

**Goal:** This document aims to provide the reader information on how to conduct the Passive Avoidance Test. Passive Avoidance evaluates learning and memory through a fear-aggravated test. 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:* passive avoidance station including overhead camera, animal shocker, and two chambers with metal floor grid and lights, separated by guillotine gate with infrared beam.
- *Software:* passive avoidance software including tracking (ex. Gemini Avoidance System).
- *Virkon:* used between trials to eliminate visual and olfactory residue in arena.

### **Test Settings**

- *Lighting:* red light.

## 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.

Testing procedures:

### **1. Day 1**

- Animal is placed in right chamber and door is closed. Trial begins immediately and lights turn on in both chambers for 30s, after which gate opens and right chamber light turns

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off. Trial ends after 300s or once animal crosses through gate, breaks infrared beam, and closes gate.

- Animal is removed from chamber and placed in temporary cage until all cagemates have been tested.
- Apparatus is cleaned with Virkon between trials.

### **2. Day 2**

- Animal is placed in right chamber and door is closed. Trials are run as in Day 1, with 2s shock 3s after crossing through gate.
- Animal is left in chamber for 30s following shock, after which animal is removed from chamber and placed in temporary cage until all cagemates have been tested.
- Apparatus is cleaned with Virkon between trials.

### **3. Day 3**

- Animal is placed in right chamber and door is closed. Trials are run as in Day 1, with no shock following crossing.

#### **Data Analysis**

- Latency to cross on Days 1, 2, and 3 is collected for analysis.