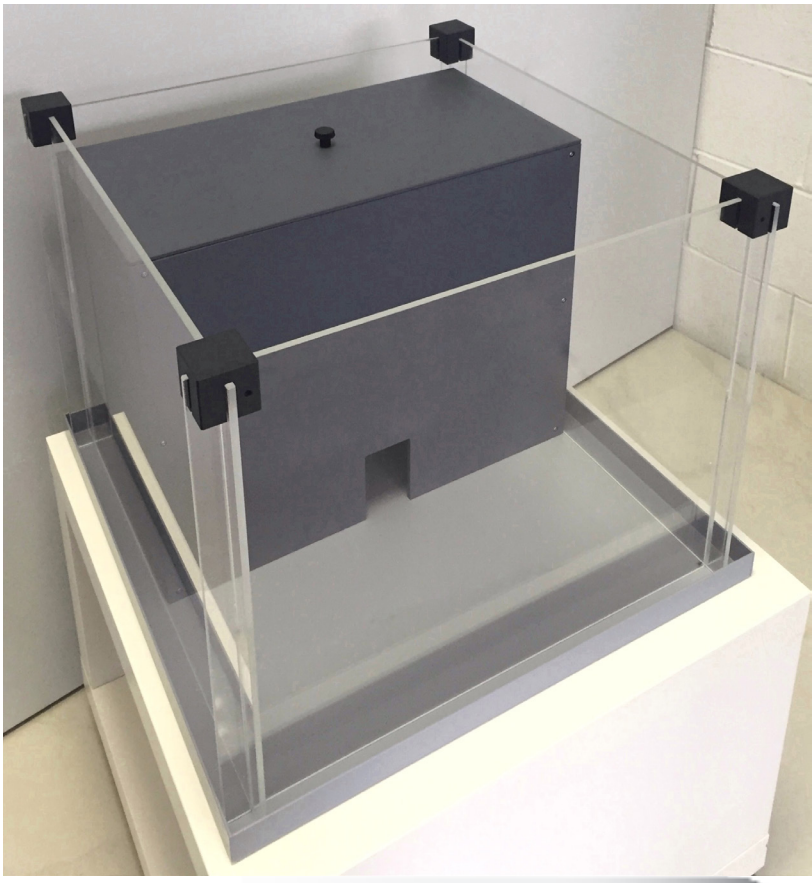
Light/Dark Box
(Light/Dark Conflict Test)

Cat. No. 47442/47443



General

The light/dark transition test was originally developed by Crawley and colleagues (Crawley and Goodwin, 1980) and subsequently validated by Costall et al (1989).

It is one of the most widely used tests to measure anxiety-like behavior in mice. The test is based on the innate aversion of rodents to brightly illuminated areas and on their spontaneous exploratory behavior in response to mild stressors, that is, novel environment and light.

Time spent in the lit compartment, and the related exploratory behavior, are reliable parameters for assessing anxiolytic effects that may be useful in identifying and/or screening of anxiolytic and anxiogenic agents.

Our Light/Dark cage allows to carry out the Light/Dark Conflict Test conveniently, recording the time spend in the bright camera and the related exploratory behavior via a video-tracking system.

FOR STUDIES ON

- Anxiolytic Agents
- Anxiogenic Agents

Main Features

- Designed to work with the all video-tracking software
- A model with opaque external walls (white or grey) is available as optional
- External cage can be used as open field
- The grey floor gives high contrast with both light and dark animals
- The special painting gives a slightly rough walking surface, pleasant for the animals

Rationale and Outline of the Procedure

The Light/Dark test is a characteristic tool used in the assessment of anxiety: the apparatus consists of a simple chamber divided into a dark and a light compartment. Rodents prefer darker areas over light areas: however when presented in a novel environment, rodents have a tendency to explore.

These two conflicting emotions lead to observable anxiety-like symptoms.

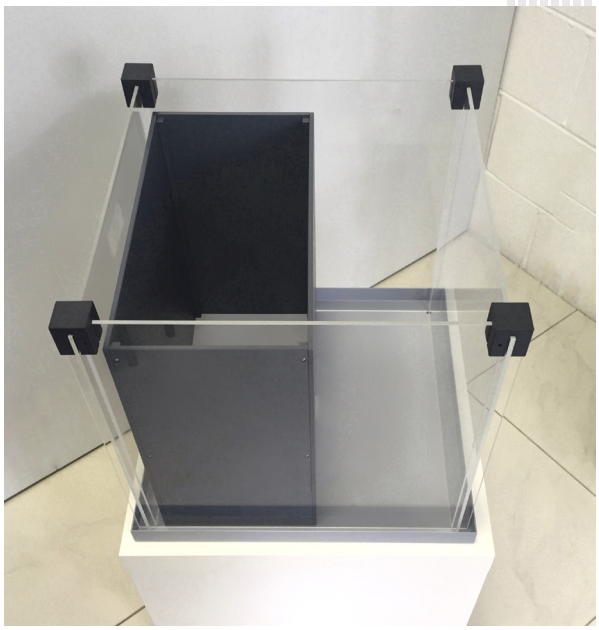
Mice are allowed to move freely between the two chambers. The number of entries into the bright chamber, the duration of time spent there and the related exploratory behaviors, detected via a videotracking system, are reliable parameters for assessing anxiolytic effects that may be useful in identifying and/or screening of anxiolytic and anxiogenic agents.

Transitions have been reported to be an index of activity-exploration because of habituation over time, and the time spent in each compartment to be a reflection of aversion. Classic anxiolytics as well as the newer anxiolytic-like compounds can be detected using this paradigm. It has the advantages of being quick and easy to use, without requiring the prior training of animals.

The light chamber has no ceiling and the walls are transparent, allowing for the simultaneous detection of bright-space anxiety as well as open-space anxiety in the original version of the test.

Cage Description

The cage is available for Mice or Rats.



The Mouse Cage is made of a Start Box (dark chamber) I.D. 42x20x35(h)cm and a Test Box (light chamber) with the same dimensions.

The Rat Cage is similar, with I.D. 48x48x40(h)cm.

Walls fit solidly onto the drop pan which represents the bottom of the cage, but lift off easily for cleaning.

The special painting of the bottom pan gives a slightly rough walking surface, pleasant for the animals, and easy to clean.

Standard model has transparent walls on the light compartment, but an optional model with opaque white walls is also available. Light is not included.

The lid in the dark compartment can be removed, see picture. The external cage, can be conveniently used as an open field.

Optimized for Video-Tracking

The grey floor gives best contrast to both light and dark animals, which is the most critical factor for **all video-tracking softwares** to work properly.

Ordering Information

47442 **Light/Dark Box for Rats**
47443 **Light/Dark Box for Mice**

Physical	Mouse	Rat
Dimensions	44x44cm	50x100cm
Wall height	35cm	40cm
Dark Box I.D.	42x20x35(h)cm	48x48x40(h)cm
Light Box I.D.	42x20x35(h)cm	48x48x40(h)cm
Weight	10Kg	26Kg
Shipping Weight	14Kg	32Kg
Packing	55x55x27cm	105x105x20cm

Color

Transparent or (optional) opaque (white or grey) external cage (**47444** Rat and **47445** Mouse)

Bibliography

Method Papers

- J. Crawley and F. K. Goodwin: "**Preliminary Report of a Simple Animal Behavior Model for the Anxiolytic Effects of Benzodiazepines**" Pharmacology Biochemistry and Behavior 13(2): 167-170, **1980**
- B. Costall et alia: "**The Effects of ACE Inhibitors Captopril and SQ29, 852 in Rodent Tests of Cognition**" Pharmacology Biochemistry and Behavior 33(3): 573-579, **1989**
- M. Bourin and M. Hascoët: "**The Mouse Light/Dark Box Test**" J Vis Exp. 463(1): 55-65, **2003**
- K. Takao and T. Miyakawa: "**Light/dark Transition Test for Mice**" JoVE 1: e104-e104, **2006**