

# Light-Dark Test BCMLA\_LDT\_001

## Purpose

To monitor the anxiety-related behaviour of mice in a two-chambered light-dark arena over a defined period of time in order to assess the anxiety phenotype.

## Experimental Design

- **Minimum number of animals** : 7M + 7F
- **Age at test**: Week 53
- **Sex**: We would expect the results of this test to show sexual dimorphism

## Procedure

1. Light levels are set so that the light intensity within the light arena is between 100 – 200 lux and the dark arena is at 4-7 lux. Light metering is performed at the start of each test day.
2. The method of recording is set up with each arena defined. The light arena is approximately one third to half of entire chamber.
3. One mouse is placed in each *light arena* and recording is started.
4. A minimum of 5 minute should be recorded up to a maximum of 20 minutes.
5. At the end of the trial, the mice are removed from the arena and returned to their home cages.
6. The chambers are cleaned with disinfectant between mice to decontaminate and remove scent cues from previously tested mice.
7. Analysis of the recording is done to measure the activity of each mouse in each of the two zones and the number of transitions between zones.

## Notes

Local data processing may be implemented to calculate derived measures from this data.

## Data QC

Local QC data to assure all data fields have recorded data. In the case all data fields have a value of 0 that particular mouse data will be removed.

1. Verify the total time of each run

## Parameters and Metadata

### Equipment manufacturer BCMLA\_LDT\_023\_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Med Association Inc., Med Associates, Custom made, Accuscan,

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### Light-Dark box set-up BCMLA\_LDT\_028\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Standalone, Cabinet enclosure,

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### Light-Dark box's walls opaque BCMLA\_LDT\_027\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: No, Yes,

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## Entry way dimensions (L x W x H, in mm) BCMLA\_LDT\_031\_001 |

v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: 101.6 x 3.175 x 101.6, 90 x 3 x 115, 5 x 100 x 40, 5 x 100 x 50,

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## Percent time in light BCMLA\_LDT\_008\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

### Derivation:

mul(div(sub(sumOfIncrements('BCMLA\_LDT\_002\_001',1), 'BCMLA\_LDT\_006\_001'), add  
(sumOfIncrements('BCMLA\_LDT\_004\_001',1), sub(sumOfIncrements  
(('BCMLA\_LDT\_002\_001',1), 'BCMLA\_LDT\_006\_001'))), 100)

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## Start time BCMLA\_LDT\_019\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Transition BCMLA\_LDT\_009\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** No, Yes,

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## **Starting position** BCMLA\_LDT\_026\_001 | v1.0

procedureMetadata

**Req. Analysis:** true

**Req. Upload:** true

**Is Annotated:** false

**Options:** Facing towards entry, Facing away from entry,

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## **Equipment model** BCMLA\_LDT\_024\_001 | v1.0

procedureMetadata

**Req. Analysis:** true

**Req. Upload:** true

**Is Annotated:** false

**Options:** Activity Test Chamber ENV-515, Versamax, Custom made,

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## **Arena version** BCMLA\_LDT\_021\_001 | v1.0

procedureMetadata

**Req. Analysis:** true

**Req. Upload:** true

**Is Annotated:** false

**Options:** Custom made, MED-OFAS-RSU,

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## **Disinfectant** BCMLA\_LDT\_025\_001 | v1.0

[procedureMetadata](#)

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** 10% Nolvasan Solution, 50% Ethanol, Distel 2%, 1% Virkon solution, Clidox, 70% ethanol, Pursept-A, Alcohol, 50% alcohol, 70% Isopropanol,

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## **Light level light chamber** BCMLA\_LDT\_016\_001 | v1.0

[procedureMetadata](#)

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** Lux

**Options:** 275 Lux, 100 - 200,

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## **Light side arena dimensions (L x W x H, in mm)** BCMLA\_LDT\_029\_001 | v1.0

[procedureMetadata](#)

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** 431.8 x 212.725 x 203.2, 180 x 207 x 140, 433 x 215 x 305, 250 x 190 x 250,

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## **Light level dark chamber** BCMLA\_LDT\_017\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** Lux

**Options:** 4 - 7,

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## **Experimenter ID** BCMLA\_LDT\_018\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## **Latency to first transition into dark** BCMLA\_LDT\_006\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Unit Measured:** s

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## Dark side arena dimensions (L x W x H, in mm) BCMLA\_LDT\_0

30\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: 431.8 x 212.725 x 203.2, 180 x 207 x 140, 425 x 210 x 305, 150 x 190 x 250,

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## Equipment ID BCMLA\_LDT\_022\_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Dark Box Insert ENV-516, Custom made, Light-Dark Insert,

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## Arena ID BCMLA\_LDT\_020\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Percent time in dark BCMLA\_LDT\_007\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Unit Measured:** %

**Derivation:**

$$\text{mul}(\text{div}(\text{sumOfIncrements}(\text{'BCMLA\_LDT\_004\_001'},1), \text{add}(\text{sumOfIncrements}(\text{'BCMLA\_LDT\_004\_001'},1), \text{sub}(\text{sumOfIncrements}(\text{'BCMLA\_LDT\_002\_001'},1), \text{'BCMLA\_LDT\_006\_001'}))), 100)$$

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## Side changes BCMLA\_LDT\_001\_001 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Unit Measured:** count

**Increments:** 20, 10, 5, 15,

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## Light side time spent BCMLA\_LDT\_002\_001 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Unit Measured:** s

**Increments:** 5, 20, 10, 15,

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## Time mobile light side BCMLA\_LDT\_003\_001 | v1.0



seriesParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Unit Measured: s

Increments: 5, 15, 20, 10,

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## Dark side time spent BCMLA\_LDT\_004\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Unit Measured: s

Increments: 5, 20, 10, 15,

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## Time mobile dark side BCMLA\_LDT\_005\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: s

Increments: 5, 20, 10, 15,

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## Light side distance travelled BCMLA\_LDT\_010\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: cm

Increments: 20, 15, 5, 10,

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## Dark side distance travelled BCMLA\_LDT\_011\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: cm

Increments: 5, 20, 10, 15,

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## Vertical activity (rearing) BCMLA\_LDT\_012\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: count

Increments: 5, 10, 20, 15,

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## Horizontal activity BCMLA\_LDT\_013\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: count

Increments: 10, 15, 20, 5,

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## Repetitive beam break ('stereotypy counts') BCMLA\_LDT\_014\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: count

Increments: 10, 5, 15, 20,

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## Total distance travelled BCMLA\_LDT\_015\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: cm

Increments: 5, 10, 15, 20,

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## Time spent in the light side in the first 5 minutes BCMLA\_LDT\_032\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

### Derivation:

ifElse('BCMLA\_LDT\_006\_001'<300, sub(incrementValue('BCMLA\_LDT\_002\_001', 1),'BCMLA\_LDT\_006\_001'), 300)

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## Test duration BCMLA\_LDT\_033\_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: min

Options: 20, 5, 10,

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## Software version BCMLA\_LDT\_034\_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Activity Monitor V7.0.5.10, Activity Monitor V6.02, Versamap Version 1.7,

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