# 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, 50 x 100 x 5, 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_030_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:**
mul(div(sumOfIncrements('BCMLA_LDT_004_001',1), add(sumOfIncrements ('BCMLA_LDT_004_001',1), sub(sumOfIncrements('BCMLA_LDT_002_001',1), '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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