

Fear Conditioning HRWLLA_FEA_001

Purpose

This procedure is used for measuring aversive learning and memory. A neutral conditioned stimulus (CS) such as steady tone is paired with an aversive unconditioned stimulus (US) such as one or more mild foot shocks. After conditioning, the spatial context or the CS (tone) elicits a central state of fear in the absence of the US (shock) that is expressed as reduced locomotor activity or total lack of movement (freezing). Immobility time is used as a measure of learning/memory performances.

Experimental Design

- **Minimum number of animals** : 7M + 7F
- **Age at test**: Week 54
- **Sex**: We would expect the results of this test to show sexual dimorphism

Equipment

- Fear conditioning chambers
- Arenas and components for cue and conditioning phases
- Computer with recording software
- Olfactory substance

Procedure

1. Day 1: Conditioning
 - a. Transport animals to the testing area.
 - b. Set up conditioning arenas in the chambers ensuring that shocker, tone delivery and camera / beam break system are working correctly.
 - c. Remove the animals from their cages and place in the arenas. Animals are conditioned using the training protocol which consists of a baseline period, audible tone, a single foot shock that co-terminates with the tone, and a period with no stimuli at the end.
 - d. Remove animals from arenas and place back in home cage. Clean arenas.
2. Day 2: Context
 - a. To be performed 24 hours after conditioning.
 - b. Transport animals to the testing area.
 - c. Set up conditioning arenas in the chamber as on day 1 except for shocker and tone delivery system which are not used.
 - d. Remove animals from their cages and place in the arena. No CS or US stimuli are presented.
 - e. Remove animals from arenas and place back in home cage. Clean arenas.

3. Day 2: Cue
 - a. To be performed performed from 2 - 24 hours after the context protocol.
 - b. Set up cue arenas using different floors, walls, olfactory cues and / or lighting from the conditioning context. Ensure that tone delivery and camera / beam break system are working correctly.
 - c. Remove animals from their cages and place in the arena. Animals are exposed to a baseline period without any stimulus followed by the presentation of the tone.
 - d. Remove animals from arenas and place back in home cage. Clean arenas.
4. At the end of the cue protocol animals are placed back into their holding room and data is analyzed by collecting the number of freezing episodes and the total freezing /immobility time.

Parameters and Metadata

Conditioning Post-shock Freeze Count HRWLLA_FEA_098_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Context: Date and time HRWLLA_FEA_041_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Conditioning +24h,

Conditioning: Mouse arena shape HRWLLA_FEA_029_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Rectangle, Square,

Conditioning: Tone stimulus intensity (dB; conditioned stimulus) HRWLLA_FEA_034_001 | v1.0

procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Unit Measured: dB

Options: 75, 77, 80, 70, 85,

Context: Mouse arena dimension HRWLLA_FEA_046_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: cm

Options: 17 x 17 x 25 cm, 30.5 cm L X 24.1 cm W X 21 cm H, 25 L x 21 W x 19 H cm, 25 x 25 x 19 cm, 16.6 cm L X 17 cm W X 25 cm H, 30.5 cm L X 24.1 cm W X 24.5 cm H,

Freeze definition HRWLLA_FEA_077_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 2, 1, 0.25,

Cue Baseline Freeze Count HRWLLA_FEA_013_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Conditioning Shock Average Motion Index HRWLLA_FEA_095_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue: Mouse arena shape HRWLLA_FEA_053_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Rectangle, Cylinder, A frame ceiling,

Conditioning: Start time of baseline HRWLLA_FEA_081_001 | v1.0
procedureMetadata

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: s

Conditioning Post-shock Average Motion Index HRWLLA_FEA_101_001 | v1.0
simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Cue Baseline Maximum Motion Index HRWLLA_FEA_018_001 | v1.0
simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Cue: Tone stimulus intensity (conditioned stimulus) HRWLLA_FEA_058_001 | v1.1
procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Unit Measured: dB

Options: 77, 75, 70, 85, 80,

Cue: Total time HRWLLA_FEA_062_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 240, 480, 300,

Cue: Near infra red light arena HRWLLA_FEA_080_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: On,

Context Average Motion Index HRWLLA_FEA_010_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning Shock Maximum Motion Index HRWLLA_FEA_097_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue: Mouse arena dimension HRWLLA_FEA_054_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: cm

Options: 17 x 17 x 25 cm, 30.5 cm L X 24.1 cm W X 24.5cm H, 20 cm dia X 30 cm H, 25 x 25 x 19 cm, 30.5 cm L X 24.1 cm W X 21 cm H, 25 L x 21 W x 19 H cm,

Conditioning: Mouse arena colour HRWLLA_FEA_031_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Clear, Metallic, White and Clear, Metallic, clear, White,

Context % Freezing Time HRWLLA_FEA_009_001 | v1.1

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: %

Derivation: $\text{mul}(\text{div}(\text{'HRWLLA_FEA_008_001'}, \text{'HRWLLA_FEA_049_001'}), 100)$

Conditioning Post-shock % Freezing Time HRWLLA_FEA_100_0

01 | v1.1

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: %

Derivation: $\text{mul}(\text{div}(\text{'HRWLLA_FEA_099_001'}, \text{'HRWLLA_FEA_039_001'}), 100)$

Conditioning Tone Minimum Motion Index HRWLLA_FEA_093_001

| v1.0

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Context: Olfactory cue HRWLLA_FEA_044_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Options: Alcohol, None,

Cue Tone Freeze Count HRWLLA_FEA_019_001 | v1.0

seriesParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Increments: Minimum 1

Context Freeze Count HRWLLA_FEA_007_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Conditioning Baseline % Freezing Time HRWLLA_FEA_003_001 | v1.1

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: true

Unit Measured: %

Derivation: mul(div('HRWLLA_FEA_002_001', 'HRWLLA_FEA_033_001'), 100)

Date equipment last calibrated (shock) HRWLLA_FEA_075_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Context Minimum Motion Index HRWLLA_FEA_011_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Conditioning Shock Minimum Motion Index HRWLLA_FEA_096_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Conditioning: Date and time HRWLLA_FEA_025_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Conditioning Post-shock Maximum Motion Index HRWLLA_FEA_103_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Mouse arenaID HRWLLA_FEA_063_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Arena 6, Arena 1, Arena 8, Arena 3, Arena 5, Arena 7, Arena 4, Arena 2,

Conditioning Baseline Minimum Motion Index HRWLLA_FEA_005_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Experimenter ID day 2 cue HRWLLA_FEA_074_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning Tone % Freezing Time HRWLLA_FEA_091_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: %

Derivation: $\text{mul}(\text{div}(\text{'HRWLLA_FEA_090_001'}, \text{'HRWLLA_FEA_036_001'}), 100)$

Conditioning: Near infra red light arena HRWLLA_FEA_078_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: On,

Cue Baseline Freezing Time HRWLLA_FEA_014_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: s

Sound generator manufacturer

HRWLLA_FEA_069_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Ugo Basile, Med Associates, San Diego Instruments,

Conditioning Baseline Maximum Motion Index

HRWLLA_FEA_0

06_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue: Tone stimulus frequency (Hz; conditioned stimulus)

HRWLLA_FEA_059_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: kHz

Options: 2, 10, 2.8, 4,

Conditioning: White house light level in arena HRWLLA_FEA_027_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: Lux

Options: 26, 100, 200, 40,

Tracking Method HRWLLA_FEA_067_001 | v1.0

procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Options: Video tracking, Beam break,

Context Freezing Time HRWLLA_FEA_008_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: s

Cue Baseline % Freezing Time HRWLLA_FEA_015_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Derivation: $\text{mul}(\text{div}(\text{'HRWLLA_FEA_014_001'}, \text{'HRWLLA_FEA_057_001'}), 100)$

Conditioning: Tone stimulus frequency (Hz; conditioned stimulus) HRWLLA_FEA_035_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: kHz

Options: 4, 2, 10, 2.8,

Cue: Mouse arena floor HRWLLA_FEA_056_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Plexi glass, Polyethylene, Perspex, PVC,

Conditioning: Length of time no stimulus HRWLLA_FEA_039_001

| v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 150, 120,

Cue Baseline Minimum Motion Index HRWLLA_FEA_017_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning: Shock stimulus intensity (unconditioned stimulus) HRWLLA_FEA_037_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: mA

Options: 0.75, 0.5, 0.4,

Cue: Length of time baseline HRWLLA_FEA_057_001 | v1.0

procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Unit Measured: s

Options: 120,

Cue: Date and time HRWLLA_FEA_050_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Options: Context + 24h, Context + 4h, Context + 2-4h,

Conditioning Baseline Freezing Time HRWLLA_FEA_002_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: s

Cue Baseline Average Motion Index HRWLLA_FEA_016_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Sound-proof box dimension HRWLLA_FEA_071_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: false Is Annotated: false

Options: 47 cm L X 35 cm W X 49 cm H, 71 cm L X 59.7 cm W X 31.7 cm H, other, 71 cm L X 63.5 cm W X 35.5 cm H,

Context Maximum Motion Index HRWLLA_FEA_012_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Context: White house light level in arena HRWLLA_FEA_043_001 | v1.2

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: Lux

Options: 100, 200, 40, 26,

Context: Mouse arena colour HRWLLA_FEA_047_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Metallic, White and Clear, White, Clear, Metallic, clear,

Cue: Start time of baseline HRWLLA_FEA_085_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: s

Date equipment last calibrated (tone) HRWLLA_FEA_076_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Conditioning Post-shock Freezing Time HRWLLA_FEA_099_001 |

v1.0

simpleParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: s

Cue Tone % Freezing Time HRWLLA_FEA_021_001 | v1.1

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: %

Derivation:
mul(div(sumOfIncrements('HRWLLA_FEA_020_001',1), 'HRWLLA_FEA_060_001'), 100)

Cue: Start time of no stimulus HRWLLA_FEA_087_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: s

Experimenter ID HRWLLA_FEA_072_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Sound generator model HRWLLA_FEA_070_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: other, VFC-100, 46000-165,

Freeze definition (minimum motion index) HRWLLA_FEA_104_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: 18, 30,

Conditioning: Length of time tone stimulus HRWLLA_FEA_036_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 30, 20,

Context: Room acclimation time HRWLLA_FEA_042_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: min

Options: 30, 60,

Cue Tone Minimum Motion Index HRWLLA_FEA_023_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Conditioning Baseline Average Motion Index HRWLLA_FEA_004_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning: Start time of no stimulus HRWLLA_FEA_084_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: s

Context: Total time HRWLLA_FEA_049_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 360, 300,

Cue: Mouse arena colour HRWLLA_FEA_055_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Red, Black and white, Clear, Beige, black and white,

Conditioning Baseline Freeze Count HRWLLA_FEA_001_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Conditioning: Length of time baseline HRWLLA_FEA_033_001 | v1.

0

procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Unit Measured: s

Options: 120, 240, 150,

Conditioning: Mouse arena dimension HRWLLA_FEA_030_001 | v1

.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: cm

Options: 30.5 cm L X 24.1 cm W X 21 cm H, 16.6 L X 17 W X 25 H cm,
25 L x 21 W x 19 H cm, 25 x 25 x 19 cm, 17 x 17 x 25 cm, 30.5 L X 24.1 W X 24.5 H cm,

Conditioning: Olfactory cue HRWLLA_FEA_028_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Options: Alcohol, None,

Cue Tone Freezing Time HRWLLA_FEA_020_001 | v1.0

seriesParameter

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: s

Increments: Minimum 1

Equipment ID HRWLLA_FEA_064_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Options: Machine B, Machine A, Machine 1, Machine 2,

Context: Mouse arena shape HRWLLA_FEA_045_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Options: Rectangle, Square,

Cue: tone response measurement time HRWLLA_FEA_060_001 | v1.0

procedureMetadata

Req. Analysis: true Req. Upload: true Is Annotated: false

Unit Measured: s

Options: 120, 180,

Context: Near infra red light arena HRWLLA_FEA_079_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: false Is Annotated: false

Options: On,

Conditioning Tone Freezing Time HRWLLA_FEA_090_001 | v1.0

simpleParameter

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: s

Cue: Start time of each tone stimulus HRWLLA_FEA_086_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: false Is Annotated: false

Unit Measured: s

Conditioning: Room acclimation time HRWLLA_FEA_026_001 | v1.0

procedureMetadata

Req. Analysis: false Req. Upload: true Is Annotated: false

Unit Measured: min

Options: 30, 60,

Equipment Model HRWLLA_FEA_066_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: FearCS Mouse-46152, Freeze monitor, 46000, MED-FVC-SCT-M,
MED-VFC2-SCT-M,

Context: Mouse arena floor HRWLLA_FEA_048_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Steel rods, Metal grill,

Cue: Length of time no stimulus HRWLLA_FEA_061_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 220, 120, 0, 100,

Conditioning: Mouse arena floor HRWLLA_FEA_032_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Steel rods, Clean saw dust, Metal grill,

Conditioning Tone Average Motion Index HRWLLA_FEA_092_001

| v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue Tone Average Motion Index HRWLLA_FEA_022_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Conditioning: Start time of each tone stimulus HRWLLA_FEA_

082_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: s

Cue: White house light level in arena HRWLLA_FEA_051_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: Lux

Options: 0, 16, 14-18,

Software HRWLLA_FEA_068_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Freeze Monitor, Anymaze, Med Associates Video Freeze,

Equipment Manufacturer HRWLLA_FEA_065_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: San Diego Instruments, Med Assoicates, Ugo Basile,

Conditioning Post-shock Minimum Motion Index HRWLLA_FE

A_102_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue Tone Maximum Motion Index HRWLLA_FEA_024_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Experimenter ID day 2 HRWLLA_FEA_073_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning Tone Freeze Count HRWLLA_FEA_089_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Conditioning Tone Maximum Motion Index HRWLLA_FEA_094_0

01 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Cue: Olfactory cue HRWLLA_FEA_052_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: 5% acetic acid, Vanillin, Cinnamon,

Conditioning: Length of time shock stimulus HRWLLA_FEA_03

8_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 0.5, 1, 2,

Conditioning: Start time of each shock stimulus HRWLLA_FE

A_083_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: s

Cue: arena rotation HRWLLA_FEA_088_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: 90 degrees,

Conditioning: Total time HRWLLA_FEA_040_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: s

Options: 380, 300, 260,

Difference in Context and Conditioning Baseline % Freezing

HRWLLA_FEA_105_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Derivation:

```
sub(mul(div('HRWLLA_FEA_008_001', 'HRWLLA_FEA_049_001'), 100), mul(div('HRWLLA_FEA_002_001', 'HRWLLA_FEA_033_001'), 100))
```

Difference in Cue Tone and Cue Baseline % Freezing

HRWLLA_FEA_106_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Derivation:

```
sub(mul(div('HRWLLA_FEA_020_001', 'HRWLLA_FEA_060_001'), 100), mul(div('HRWLLA_FEA_014_001', 'HRWLLA_FEA_057_001'), 100))
```

Difference in Conditioning Post-shock and Conditioning Baseline % Freezing

HRWLLA_FEA_107_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Derivation:

```
sub(mul(div('HRWLLA_FEA_099_001', 'HRWLLA_FEA_039_001'), 100), mul(div('HRWLLA_FEA_002_001', 'HRWLLA_FEA_033_001'), 100))
```

Cue: Length of time tone stimulus HRWLLA_FEA_108_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Unit Measured: s

Options: 20, 120,
