Y-maze RBRCLA_YMZ_001

Purpose

The Y-maze is used to assess spontaneous alternation performance as an index of active retrograde working memory in rodents.

Experimental Design

- **Minimum number of animals :** 7M + 7F
- **Age at test:** Week 51

Equipment

Y shaped arena with three arms of identical length at 120° angles.

Camera and computer with tracking software if using video tracking.

Procedure

1. Transport animals to testing room at least 15 minutes prior to testing.
2. Ensure lighting conditions are as desired and if using video tracking that the camera is working.
3. Remove mouse from its cage and place in the start arm. Allow the mouse to explore the arena for 8 minutes.
4. Either manually score the entries or use the automatic tracking while the mouse explores the arena for the duration of the test. Arm entry is defined differently depending on the scoring system.
    a. Manual: arm entry is scored when all four paws enter the new location.
    b. Automated tracking: arm entry is scored when the centre of the mouse enters the new location.
5. Remove mouse from the arena and place back in home cage.
6. Clean area with consistent disinfectant (i.e. ethanol/clidox) before testing next mouse.

Notes

Minimum of 5 arm entries are required for the ratios to be calculated to ensure the accuracy of the derived values.

Parameters and Metadata

Tracking equipment manufacturer RBRCLA_YMZ_025_001 | v1.1

procedureMetadata

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

Options: Noldus, Accuscan, O'hara Co.Ltd,

Total arm entries RBRCLA_YMZ_002_001 | v1.0

simpleParameter

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

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Same arm entry ratio per total arm entries RBRCLA_YMZ_009_001 | v1.2

simpleParameter

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

Unit Measured: %

Derivation:
ifElse(greaterThan('RBRCLA_YMZ_002_001',4), mul(div('RBRCLA_YMZ_008_001', 'RBRCLA_YMZ_002_001'), 100),'')

Tracking method RBRCLA_YMZ_017_001 | v1.1

procedureMetadata

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

Options: None, Video,

Maze model RBRCLA_YMZ_023_001 | v1.0

procedureMetadata

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

Options: JAX_YM, YM-3002,

Tracking equipment model RBRCLA_YMZ_026_001 | v1.0

procedureMetadata

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

Options: Opto-Varimex 4, Time YM2,

Latency to leave start arm RBRCLA_YMZ_001_001 | v1.0

simpleParameter

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

Unit Measured: s

Tracking equipment ID RBRCLA_YMZ_024_001 | v1.0

procedureMetadata

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

Options: Ethovision, Y tracker, YM-1020,

Number of spontaneous alternations RBRCLA_YMZ_004_001 | v1.1

simpleParameter

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

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Software RBRCLA_YMZ_028_001 | v1.1

procedureMetadata

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

Options: Ethovision 13.0, Time YM2 software,

Light level RBRCLA_YMZ_013_001 | v1.0

procedureMetadata

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

Unit Measured: Lux

Options: 50, 20, 4,

Number of triplets RBRCLA_YMZ_003_001 | v1.2

simpleParameter

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

Derivation:
ifElse(greaterThan('RBRCLA_YMZ_002_001', 1), sub('RBRCLA_YMZ_002_001', 2),0)

Duration at centre prior to arm re-entry RBRCLA_YMZ_019_001 | v1.0

procedureMetadata

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

Unit Measured: s

Options: 1,

Experimenter ID RBRCLA_YMZ_020_001 | v1.0

procedureMetadata

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

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Cleaning agent/disinfectant RBRCLA_YMZ_016_001 | v1.0

procedureMetadata

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

Options: 70% Ethanol solution, 6% sodium hypochlorite solution,

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Alternate arm entry ratio per number of triplets RBRCLA_YMZ_007_001 | v1.3

simpleParameter

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

Unit Measured: %

Derivation:
ifElse(greaterThan('RBRCLA_YMZ_002_001',4), mul(div('RBRCLA_YMZ_006_001', sub ('RBRCLA_YMZ_002_001', 2)), 100),'')

Number of alternate arm entries RBRCLA_YMZ_006_001 | v1.1

simpleParameter

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

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Maze ID RBRCLA_YMZ_021_001 | v1.0

procedureMetadata

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

Options: Arena 1, Arena 2, y-maze 1,

Arm dimensions RBRCLA_YMZ_012_001 | v1.1

procedureMetadata

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

Unit Measured: cm

Options: 33.65 L x 6 W x 15 H, 40 L x 3 W x 12 H,

Alternation ratio per number of triplets RBRCLA_YMZ_005_001 | v1.2

simpleParameter

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

Unit Measured: %

Derivation:
ifElse(greaterThan('RBRCLA_YMZ_002_001',4), mul(div('RBRCLA_YMZ_004_001', sub ('RBRCLA_YMZ_002_001', 2)), 100),'')

Number of same arm entries by number of doublets RBRCLA_YMZ_008_001 | v1.1

simpleParameter

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

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Alternating start arm RBRCLA_YMZ_029_001 | v1.0

procedureMetadata

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

Options: Yes, No,

Maze manufacturer RBRCLA_YMZ_022_001 | v1.0

procedureMetadata

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

Options: The Jackson Laboratory, O'hara Co.Ltd,

Acclimatisation time (minimum) RBRCLA_YMZ_011_001 | v1.0

procedureMetadata

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

Unit Measured: min

Options: 60, 15, 30,

Scoring method RBRCLA_YMZ_018_001 | v1.1

procedureMetadata

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

Options: Automated, Manual,

Feacal boli (count) RBRCLA_YMZ_010_001 | v1.0

simpleParameter

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

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Placement in start arm RBRCLA_YMZ_015_001 | v1.1

procedureMetadata

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

Options: End of arm, Mid-arm,

Date tracking equipment last calibrated RBRCLA_YMZ_027_001 | v1.0

procedureMetadata

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

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