

Y-maze IMPC_YMZ_001

- [Purpose](#)
- [Experimental Design](#)
- [Equipment](#)
- [Procedure](#)
- [Parameters](#)
- [Metadata](#)

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 mutant animals required: 7 males + 7 females

Minimum age of animals: 11 weeks.

Sex: both males and females

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.
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.

Parameters

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Latency to leave start arm IMPC_YMZ_001_001	1.0	simpleParameter	✓		✓					s	FLOAT
Total arm entries IMPC_YMZ_002_001	1.0	simpleParameter	✓		✓						INT
Number of triplets IMPC_YMZ_003_001	1.2	simpleParameter							IMPC_YMZ_002_001 2 -		INT

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Number of spontaneous alternations IMPC_YMZ_004_001	1.1	simpleParameter	✓								INT
Alternation ratio IMPC_YMZ_005_001	1.2	simpleParameter			✓				IMPC_YMZ_004_001 IMPC_YMZ_002_001 2 - / 100 *	%	FLOAT
Number of alternate arm entries IMPC_YMZ_006_001	1.1	simpleParameter									INT
Alternate arm entry ratio IMPC_YMZ_007_001	1.3	simpleParameter							IMPC_YMZ_006_001 IMPC_YMZ_002_001 2 - / 100 *	%	FLOAT
Number of same arm entries IMPC_YMZ_008_001	1.1	simpleParameter									INT
Same arm entry ratio IMPC_YMZ_009_001	1.2	simpleParameter							IMPC_YMZ_008_001 IMPC_YMZ_002_001 2 - / 100 *	%	FLOAT
Feacal boli (count) IMPC_YMZ_010_001	1.0	simpleParameter									INT

Metadata

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Acclimatisation time (minimum) IMPC_YMZ_011_001	1.0	procedureMetadata	✓				15 60			min	INT
Arm dimensions IMPC_YMZ_012_001	1.1	procedureMetadata	✓	✓			33.65 L x 6 W x 15 H			cm	TEXT
Light level IMPC_YMZ_013_001	1.0	procedureMetadata	✓				50 20			Lux	INT
Test duration IMPC_YMZ_014_001	1.1	procedureMetadata	✓	✓			8 10			min	INT
Placement in start arm IMPC_YMZ_015_001	1.1	procedureMetadata	✓	✓			Mid-arm End of arm				TEXT
Cleaning agent/disinfectant IMPC_YMZ_016_001	1.0	procedureMetadata	✓				70% Ethanol solution				TEXT
Tracking method IMPC_YMZ_017_001	1.1	procedureMetadata	✓	✓			Video None				TEXT
Scoring method IMPC_YMZ_018_001	1.1	procedureMetadata	✓	✓			Manual Automated				TEXT
Duration at centre prior to arm re-entry IMPC_YMZ_019_001	1.0	procedureMetadata	✓				1			s	INT
Experimenter ID IMPC_YMZ_020_001	1.0	procedureMetadata	✓								TEXT
Maze ID IMPC_YMZ_021_001	1.0	procedureMetadata	✓				y-maze 1 Arena 1 Arena 2				TEXT
Maze manufacturer IMPC_YMZ_022_001	1.0	procedureMetadata	✓	✓			The Jackson Laboratory				TEXT
Maze model IMPC_YMZ_023_001	1.0	procedureMetadata					JAX_YM				TEXT
Tracking equipment ID IMPC_YMZ_024_001	1.0	procedureMetadata					Y tracker Ethovision				TEXT
Tracking equipment manufacturer IMPC_YMZ_025_001	1.1	procedureMetadata		✓			Accuscan Noldus				TEXT
Tracking equipment model IMPC_YMZ_026_001	1.0	procedureMetadata					Opto-Varimex 4				TEXT
Date tracking equipment last calibrated IMPC_YMZ_027_001	1.0	procedureMetadata									DATETIME
Software IMPC_YMZ_028_001	1.1	procedureMetadata		✓			Ethovision 13.0				TEXT

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Alternating start arm IMPC_YMZ_029_001	1.0	procedureMetadata	✓	✓			Yes No				TEXT