🌐 Open Field Test

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1 *Works for me*   This protocol is published without a DOI.

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ABSTRACT

The open field test measures locomotor activity and anxiety-like behavior in rodents.

PROTOCOL CITATION

Lani Tieu 2020. Open Field Test. **protocols.io**
https://protocols.io/view/open-field-test-bigfkbtn

KEYWORDS

anxiety-like behavior, locomotor, rats, open field

LICENSE

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GUIDELINES

- Testing is performed in a standard lit room
- Environment must be silent and still during experiment to minimize stress to the animal
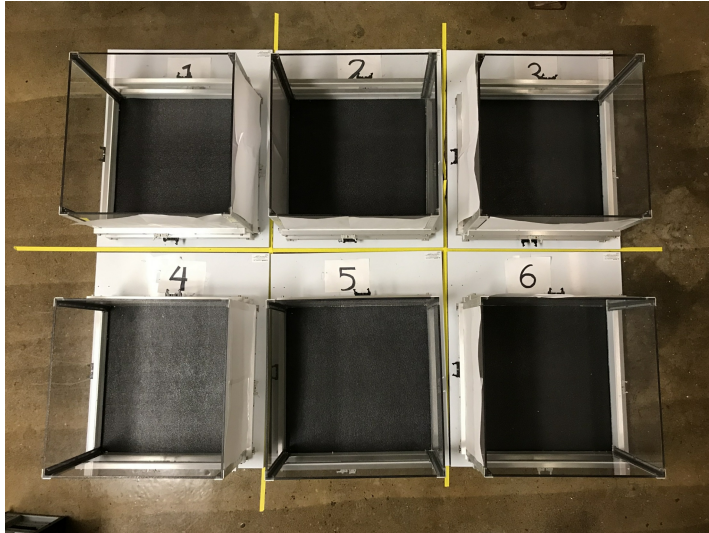
MATERIALS TEXT

Equipment
- 6 open field boxes
- Camera
- Tripod
- 15 ft USB cord
- Laptop computer (using AnyMaze video tracking software)
- Quatricide (cleaner)

BEFORE STARTING

Allow the animals to acclimate to the experimental room in their home cages for 30 minutes to minimize stress.

Open Field Maze Setup

1   Arrange open field boxes like this:

2   Clean each box with quatricide

3   Connect camera to computer with USB cord, then attach the camera to tripod

4   Hang the tripod on hook that is located on ceiling right above the open field boxes

5   Adjust camera so that the entire open field boxes can be seen on the screen

Video-tracking Software Setup

6   Open AnyMaze on computer, then open 'LOCOMOTOR Protocol'

7   Turn on the camera with remote control and select 'PC camera' as the source to project the video onto the laptop

8   Go to 'Protocol' > 'Video Sources' > 'OF1' > select 'DEMO1'

   8.1   Select 'DEMO1' for all boxes

   8.2   Name: OF1 = Open Field 1 = Box 1

9   Within each box, select and highlight the open field arena (black space of the field)

10   Go to 'Apparatus'.

10.1   Adjust the apparatus (orange square outline) to fit the entire area of the box

10.2   Adjust the green measure to only fit the black area of the box

10.3   Set 'Length of ruler line' to 450mm

10.4   Go to 'Grid settings' then check 'Include square grid with square at centre' and set to 10 cm

11   Go to 'Zone' under 'Tracking & Behavior' and specify the inner and outer zones

11.1   Zone name: Inner Zone

1. Select the center squares as the inner zones for each box.
2. Go to 'Set zone entry settings' then check 'use the centre of the animal'

11.2   Add another zone by clicking 'Add item'

11.3   Zone name: Outer Zone

1. Select the outer squares for each box (squares that were not selected for the inner zone)

12   Set animal colors. Check 'Lighter animals' for white rats

13   Go through the tabs to make sure the settings are correct:

- Test duration = 15 min
- Can add a column (ex: tail ID) that will show up in 'View animals'

14   Go to 'Experiment' then 'View treatments'

14.1   Input the drug under 'Treatments' and the number of animals

14.2 Go to 'View animals'. Input the treatment and sex for each animal

15 Go to 'Test' and add an animal by pressing the green '+' button. Do this for all 6 boxes.

16 Click 'Start All' to start the recording when you are ready to begin testing.

Testing	15m

17 When recording begins gently place rat in the center of the open field box, then step out of the frame to place another rat in another box

> 📄 Make sure the animal is facing in the same direction each time the experimenter is placing it in the box.
>
> Do not cross over to another box as tracking system can pick up the movements.
>
> Check to make sure the software is tracking the animal on the screen after placing animal in the box.

18 Step out of the room after placing each animal in each box

19 When the session ends, clean the open field boxes with quatricide before testing another group of animals