

Elevated Plus Maze
IACUC Standard Procedure
Effective Date: October 2021

Description of procedure:

The Elevated Plus Maze (EPM) is used to assess anxiety, emotionality and reactivity. The Plus Maze consists of two enclosed arms and two open arms equipped with rows of infrared photocells interfaced with a computer. While the open arms are, by design, anxiogenic, the animal is free to move into the closed arms. This model is based on the animals' aversion to open and elevated spaces.

Procedure Steps:

1. Habituation of the animal in the testing room for an hour prior to the test is encouraged.
2. The animal is placed in the center of the maze and allowed to explore for approximately 10 min. White noise may be played to eliminate distracting sounds. To start the test, an animal is placed into the intersection of the open and closed arms of each respective maze (a beam break in this area triggers the start of the test). The animal may spend time either in a closed safe area (closed arms) or in an open area (open arms).
3. A computer tracking system is used to record the animal's movements around the arena. Alternatively, the animal's movements can be video-recorded using a camera placed overhead. The researcher can then use post-video processing software to assess distance and time obtained from the video recordings.
4. Variables of interest typically include latency to enter closed and open arms of the maze, time spent in the open and closed arms, and activity in the closed arm of the maze.
5. The maze should be cleaned between each animal.

