# *Standard Operating Procedure*
for
# *The Novel Object Recognition Test for Mice*

1.0 PURPOSE

This procedure describes how to acclimate and test mice in the novel object recognition test. This is a commonly used paradigm to test learning and memory in the mouse. The task is particularly useful to assess working memory and function of the mouse frontal cortex.

2.0 SCOPE (Should include which Cores this SOP applies to)

This procedure applies to all personnel who will test mice in the novel object recognition test within the Stem Cells Engraftment and *in vivo* Analysis Core.

3.0 PROCEDURE

3.1 Apparatus

The testing arena (40cm x 40cm x 50cm tall) is fabricated from clear Plexiglas on the sides and opaque white Plexiglas on the bottom.

3.2 General Procedures

All testing occurs during the dark-phase (the active phase) of the light cycle. Testing is conducted under dim white-light illumination (about 150 lux). The subjects are moved from their housing room to the testing room and allowed to acclimate for at least 10min before testing. After testing is completed, the mice are immediately returned to the housing room. All phases are recorded using digital video cameras.

3.3 Day 1: Acclimation

1. Clean the testing arena with soap and water. Allow the arena to dry before use.
2. Begin recording. Hold the test card (with the date, test name, and testing conditions) in view. Hold the subject's cage card in view.
3. Place the subject into the center of the arena.
4. After five minutes, return the subject to its homecage.
5. Test the remaining subjects.
6. Clean the arena with soap and water.
7. Place two novel objects into the arena.
8. Begin recording. Hold the test card (with the date, test name, and testing conditions) in view. Hold the subject's cage card in view.
9. Place the subject into the center of the arena.
10. After five minutes, return the subject to its homecage.

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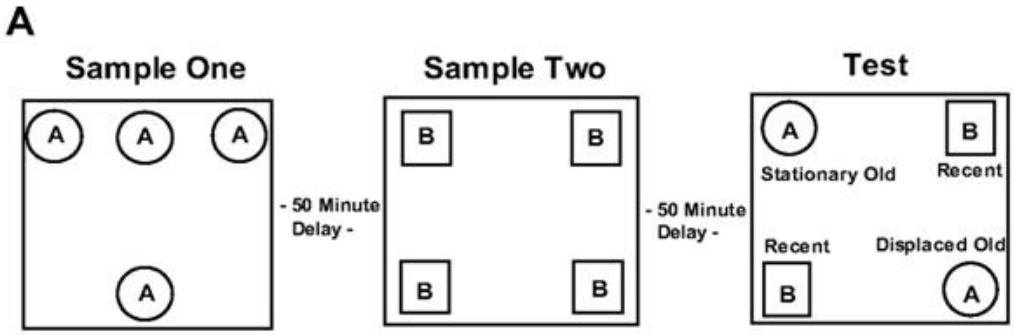
3.4 Day 2: Testing

1. Set up the video camera.
2. Refer to Figure A (below) for configuring the location of the objects.
3. Phase I: Place four identical, novel objects in the arena according to the configuration shown in Figure A, "Sample One."
4. Begin recording. Hold the test card (with the date, test name, and testing conditions) in view. Hold the subject's cage card in view.

5. Place the subject into the center of the arena.
6. After five minutes, return the subject to its homecage.
7. Phase II: Place four identical, novel objects in the arena according to the configuration show in Figure A, “Sample Two.”
8. Begin recording. Hold the test card (with the date, test name, and testing conditions) in view. Hold the subject’s cage card in view.
9. 50 minutes after end of Phase I, place the subject into the center of the arena.
10. After five minutes, return the subject to its homecage.
11. Phase III: Place the objects in the arena according to the configuration show in Figure A, “Sample Two.”
12. Begin recording. Hold the test card (with the date, test name, and testing conditions) in view. Hold the subject’s cage card in view.
13. 50 minutes after end of Phase II, place the subject into the center of the arena.
14. After five minutes, return the subject to its homecage.




3.6 References

DeVito LM, Konigsberg R, Lykken C, Sauvage M, Young III WS, Eichenbaum H (2009). Vasopressin 1b Receptor Knock-Out Impairs Memory for Temporal Order. J Neurosci 29(9):2676-2683.