Social interaction test

1. Use a square open-field. We recommend that you use a 60 cm × 60 cm square open-field because our HMM estimations were based upon this size of open-field. Given that the positions of the animals are detected on the basis of contrast with the background, you might want to use a field that is a different color from that of the mice (e.g. a black open-field for white mice, and a white open-field for black mice).

2. You can change the light intensity, duration of the test, and duration of housing in isolation before the test depending on the purpose of your study. In our study, we kept each mouse in isolation for seven days, and the duration of test was 10 min under incandescent lighting (80 lux).

3. Position a CCD camera or digital video camera over the center of the open-field. Please check that the whole field falls within the range of the camera. If you plan to capture the behavior into DuoMouse in real time, connect the CCD or digital video camera to the computer implementing DuoMouse.

4. Place two mice gently in opposite corners of the field.

5. Record their behavior using DuoMouse for real-time capture (see below). You can also record their behavior into another video medium source and then analyze their behavior later using DuoMouse.