

Feb 28, 2024

Odor Retention

DOI

<https://dx.doi.org/10.17504/protocols.io.eq2lyjoeqlx9/v1>

sdwalto¹, Jeffrey Kordwer¹, Bryan_Killinger²

¹ASU NDRC; ²Rush University



sdwalto

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.eq2lyjoeqlx9/v1>

Protocol Citation: sdwalto , Jeffrey Kordwer, Bryan_Killinger 2024. Odor Retention. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.eq2lyjoeqlx9/v1>

License: This is an open access protocol distributed under the terms of the **[Creative Commons Attribution License](#)**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: February 28, 2024



Last Modified: May 31, 2024

Protocol Integer ID: 95895

Keywords: ASAPCRN, odor threshold, mice behavior, mice with olfactory impairment, odor retention odor retention test, olfactory impairment, short term olfactory memory, mice

Funders Acknowledgements:

Jeffrey Kordower

Grant ID: NIH R21 NS109871

Abstract

Odor retention test optimized for mice. This test assesses short term olfactory memory. Mice with olfactory impairments or deficits should score lower.

Guidelines

ODERANT PAIRS: limonene (diluted 1:10) and carvone (diluted 1:10); Amylacetate (1:100) and Anisol (1:100); and propyl acetate (1:10) and Pentanal (1:10).

Notes:

- Paper swabs soaked in a given odorant were used inside the cartridges.
- Investigation time defined as the duration of active sniffing with the nose placed less than 1 cm away from the cartridge.

Materials

- **ODERANT PAIRS**: limonene (diluted 1:10) and carvone (diluted 1:10); Amylacetate (1:100) and Anisol (1:100); and propyl acetate (1:10) and Pentanal (1:10).

- Paper swabs

- Mesh balls (tea balls)



- 1 Prepare and empty rodent cage with no bedding.
- 2 Prepare the odorants by diluting in mineral oil. (See guidelines)
- 3 Acclimate mouse to setup (empty cage with odor cartridges). Place mouse in the cage and expose to 2 empty odor cartridges on either side of the cage for 5 mins.
- 4 Expose mouse to the same unfamiliar odor in both cartridges for 5 mins. (**Acquisition**)
- 5 After 6, 16 or 30 mins post-acquisition, expose the mouse to a novel odorant and the familiar odorant from Step 4 and record the time spent investigating both the novel and familiar odorant for all trials. (Total investigation time capped at 1 min). (**Recall**)
- 6 The preferred odor was recorded and the preference was calculated based on the recall trial.