



Figure 4 - Figure Supplement 1: Silencing KC impairs olfactory memory performances but maintains olfactory perception.

We verified that silencing KCs with TNTe (*KC > TNTe*) as in Fig. 4c and 6 impairs associative learning as a control to show that the same inactivation method is working. **a.** We trained groups of 30 third-instar larvae in sets of two. For each pair, one group, the “paired group”, was presented with EA (green rectangles) and fructose-supplemented agar for 3 times 3 min-long pairing intercalated with 3 min of no odor and pure agar. The other group, the “unpaired group”, received EA for 3 min and fructose-supplemented agar for the 3 next min, 3 times with no overlapping. The two groups were then tested for their preference for EA, which was estimated by $Pref_{EA} = (N_{EA} - N_{air}) / (N_{EA} + N_{air})$, and a Performance Score was computed by subtracting the $Pref_{EA}$ in the “paired” group to the $Pref_{EA}$ obtained in the “unpaired” group. A positive score indicates appetitive memory, whereas a zero score indicates no memory. **b.** The third-instar larvae with silenced KCs (*KC > TNTe*; N=8) did not show appetitive short-term memory while the control line (*empty Split-GAL4*, N=7) did. *: $p < 0.05$, **: $p < 0.01$, Wilcoxon test. Individual data points and mean \pm s.e.m. are shown. **c.** The experimental larvae (*KC > TNTe* N=8) still exhibited attraction to the trained odor, indicating that learning performance was abolished, but odor navigation was not fully abolished. Statistics are the same as in **b.**