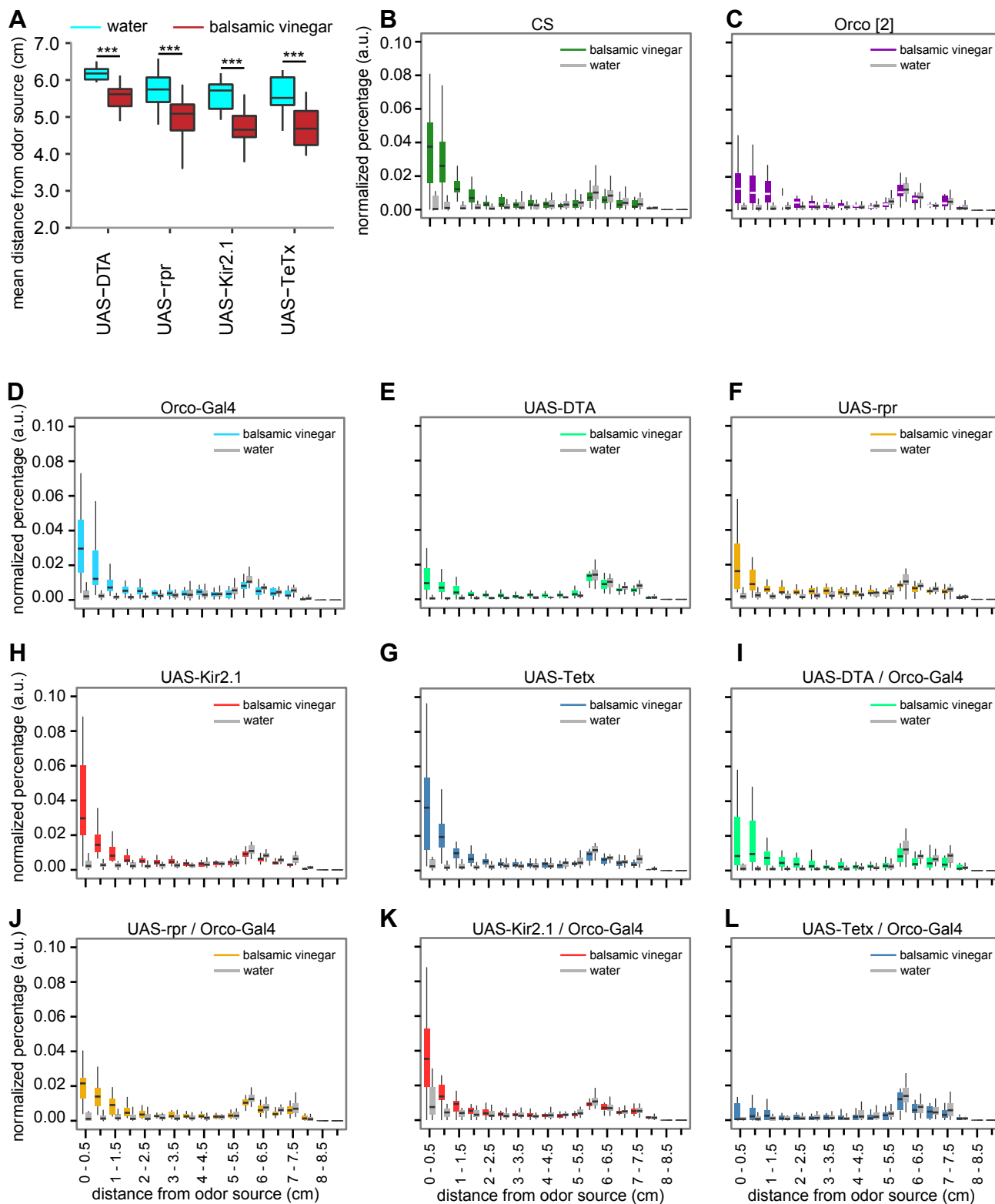


**Figure S1. Parental controls in the *Flywalk* paradigm.** A - D) Odor-induced upwind displacement in effector expressing flies and their corresponding parental controls to a set of odors. Filled boxes indicate statistically significant differences from the negative control mineral oil (MOL, transparent colors;  $p < 0.05$ ; Wilcoxon signed rank test;  $n = 15$  flies). Letters above the boxes indicate significant differences between tested fly groups within a certain odor ( $p < 0.05$ ; Wilcoxon signed rank test;  $n = 15$  flies). *rpr* = *reaper*, *DTA* = *diphtheria toxin*, *TeTx* = *tetanus toxin*



**Figure S2. Parental controls in an open-field arena.** A) Mean distances of UAS-parental control lines. Asterisks indicate significant differences between their response to balsamic vinegar and the water control ( $p < 0.05$ , ; Friedman Test;  $n = 20$  flies per genotype) B - L) Normalized distribution of all tested genotypes in the open field arena.