



**Figure S4: *C. elegans* L4 larvae are attracted to isoamyl alcohol odorant and repelled from 1-octanol odorant and dauer larvae show variation in response to the controls (in experiments with odorants of live invertebrates).** Shown are control treatments from chemotaxis experiments with living (A) *O. asellus* (n = 11), (B) *P. scaber* (n = 11), (C) *Armadillidium* sp. (n = 11), (D) *Lithobius* sp., (n = 11–12) and (E) *D. melanogaster* (n = 11–12). Isoamyl alcohol and 1-octanol were used as control attractant or repellent, respectively. Isoamyl alcohol or 1-octanol was applied to a piece of filter paper and fixated in pipette tips at the lid of the assay plates. Empty tips were positioned opposite to the control. Two empty tips were used as control for general worm movement. A positive choice index indicates attraction to the control odorant (treatment), a negative choice index indicates repulsion from control odorant (empty), a choice index of 0 indicates equal choice of both sides. For comparison of choice indices with 0, the Wilcoxon signed-rank test with false discovery rate (FDR) correction for multiple testing was applied. Data are presented as boxplots with the median as a thick horizontal line, the interquartile range as box, the whiskers as vertical lines, and each replicate depicted by a dot. Significance is designated to the following scale: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$  (with 30–250 worms per replicate).