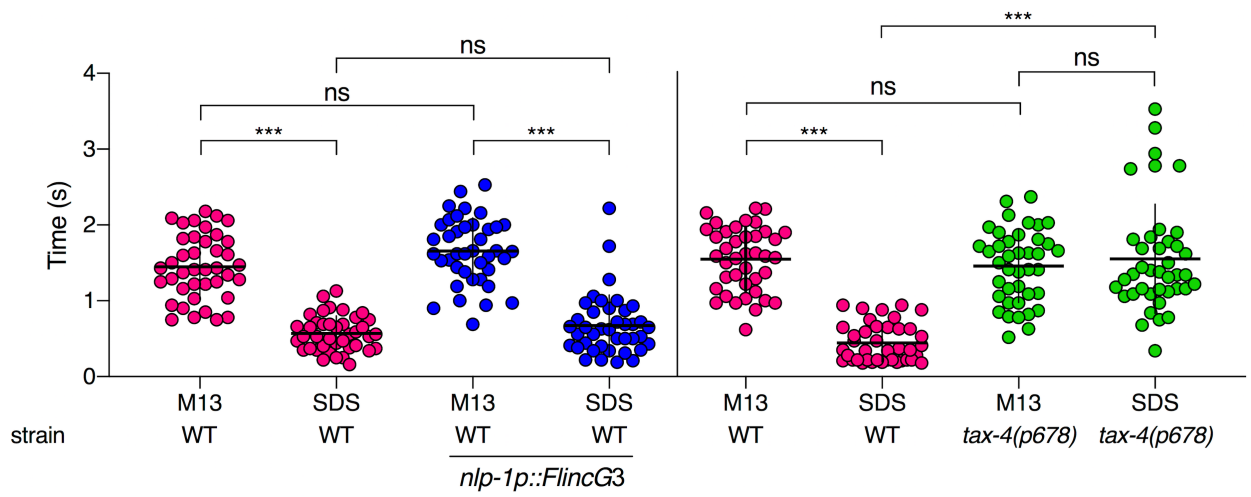

Figure S9 Non-normalized responses of wild-type, *nlp-1p::FlincG3*-expressing, and *tax-4* mutant animals to SDS and control buffer. Dot plots display the raw reversal time values underlying the normalized response indices presented in Figure 7C. The time each animal reversed into 1 mM SDS (diluted in M13 buffer) or into M13 buffer alone is plotted for wild-type, *nlp-1p::FlincG3*-expressing, and *tax-4(p678)* mutant animals. Wild-type (pink dots) and *nlp-1p::FlincG3*-expressing animals (blue dots) halt backward movement into 1 mM SDS more rapidly than into control M13 buffer ($p<0.001$, t-test), indicating normal PHB circuit function. In contrast, there is no significant difference in the response of *tax-4(p678)* mutant animals (green dots) to 1 mM SDS and M13 buffer ($p>0.05$, t-test), indicating a failure of the PHB circuit to sense SDS. One-factor ANOVA analysis was first performed, then two-sample t-tests and the Hochberg procedure for multiple comparisons were performed. Wild-type and *nlp-1p::FlincG3*-expressing animals assessed on the same day are on the left, and wild-type and *tax-4(p678)* mutant animals assessed on the same day are on the right. For each genotype, 40 animals were tested

for their response to control M13 buffer, and 40 animals were tested for their response to dilute SDS. Horizontal bars indicate mean; vertical error bars indicate ±SD.