



**Figure 3 – Figure Supplement 1.** *IR76b* and *IR25a* are required for taste perception to short-, medium-, and long-chain fatty acids. Proboscis extension response (PER) was measured as described in Figure 3A. **A** Both control and *IR76b<sup>2</sup>* mutant flies are responsive to sucrose. Mann Whitney Test:  $U = 740$ ,  $P=0.5502$ ;  $N=40$ . **B** *IR76b<sup>2</sup>* mutant flies significantly reduce PER to fatty acids compared to control flies. REML:  $F_{1,88} = 82.53$ ,  $P<0.0001$ , with Sidak's Test for multiple comparisons;  $N=40-50$ . **C** Both control and *IR25a<sup>1</sup>* mutant flies are responsive to sucrose. Mann Whitney Test:  $U = 565$ ,  $P=0.2799$ ;  $N=33-40$ . **D** *IR25a<sup>1</sup>* mutant flies significantly reduce PER to fatty acids compared to control flies. REML:  $F_{1,71} = 43.40$ ,  $P<0.0001$ , with Sidak's Test for multiple comparisons;  $N=17-40$ . Error bars indicate  $\pm$ SEM. \*  $P<0.05$ ; \*\*  $P<0.01$ ; \*\*\*  $P<0.001$ ; \*\*\*\*  $P<0.0001$ .