**Figure S1. *Meep* expression is dependent on dietary sugar concentration.** RT and qPCR showed that larval fat body *meep* expression was reduced by HS feeding. Fat bodies from r4>*meep*i larvae have reduced *meep* expression compared to the control genotype, which was further decreased when reared on an HSD. Data is graphed using the 2-∆∆Ct method to show fold change(Livak and Schmittgen 2001). All statistical tests are performed on log10 transformed ∆Ct values. Error bars represent SEM, (n=8 per experimental group), \**P*<0.05;; \*\*\**P*<0.001; \*\*\*\**P*<0.0001.



**Figure S2. Bortezomib and TUDCA have differing effects on pupariation and eclosion in HS-fed Drosophila.** Larvae were observed from egg lay up to pupariation (A; n>800 per experimental group) and observed from pupariation to eclosion into adults (B; n≥18 per experimental group). All statistical values for A & B are recorded in Table S1, comparing each experimental diet to the control diet within the same genotype.

|  |
| --- |
|  |
| GENOTYPE | DIET | # PUPARIATED(AVERAGE) | PUPARIATION #COMPARISON(*P*-VALUE) | MEDIAN PUPARIATION TIME(DAYS) | PUPARIATIONCURVE COMPARISON(*P*-VALUE) | # ECLOSED(AVERAGE) | ECLOSED #COMPARISON(*P*-VALUE) | MEDIAN ECLOSION TIME(DAYS) | ECLOSIONCURVE COMPARISON(*P*-VALUE) |
| control | Control | 301 | - | 8.7 | - | 149 | - | 12.9 | - |
| TUDCA | 233 | 0.0286 | 8.8 | 0.5760 | 124 | 0.1429 | 12.9 | 0.2817 |
| Bortezomib | 295 | >0.9999 | 9.3 | 0.0243 | 155 | 0.6857 | 13.3 | 0.8399 |
| r4>*meep*i | Control | 288 | - | 11.7 | - | 23 | - | 14.6 | - |
| TUDCA | 214 | 0.0494 | 10.8 | <0.0001 | 15 | 0.4729 | 13.3 | 0.6202 |
| Bortezomib | 256 | 0.2000 | 12.1 | 0.1359 | 5 | 0.0286 | 15.0 | <0.0001 |

**Table S1. Bortezomib and TUDCA have differing effects on pupariation and eclosion in HS-fed Drosophila.**  Fewer offspring pupariated on TUDCA diets, whereas bortezomib had no significant effect on pupariation numbers. A larval developmental delay occurred with bortezomib supplementation in the control genotype, whereas TUDCA tended to speed the rate of development for r4>*meep*i. Bortezomib slowed and reduced eclosion success in r4>*meep*i animals.