**Figure 1: Muscle-specific *Tsc1* knockout reduces lifespan in mice.**

**Figure 2: Knockdown of *Tsc1* in Drosophila muscles shortens lifespan.** Skeletal muscle (*24B-*GAL4) driven knockdown of *Tsc1* using a control line or two different shRNA lines (A-B). For each gender n=288 to 492. C) Cardiac muscle (*Hand-*GAL4) driven knockdown of *Tsc1* (n=244 to 456 for each gender).

**Figure 3: Knockdown of *Atg8a* in Drosophila muscles shortens lifespan.** Lifespan of skeletal muscle (*24B*-GAL4) driven knockdown of *Atg5* (A, n=185 and 182 for female and male knockdown flies respectively), *Atg8a* (B, n=134,148) and *Atg8b* (C, n=147,178).