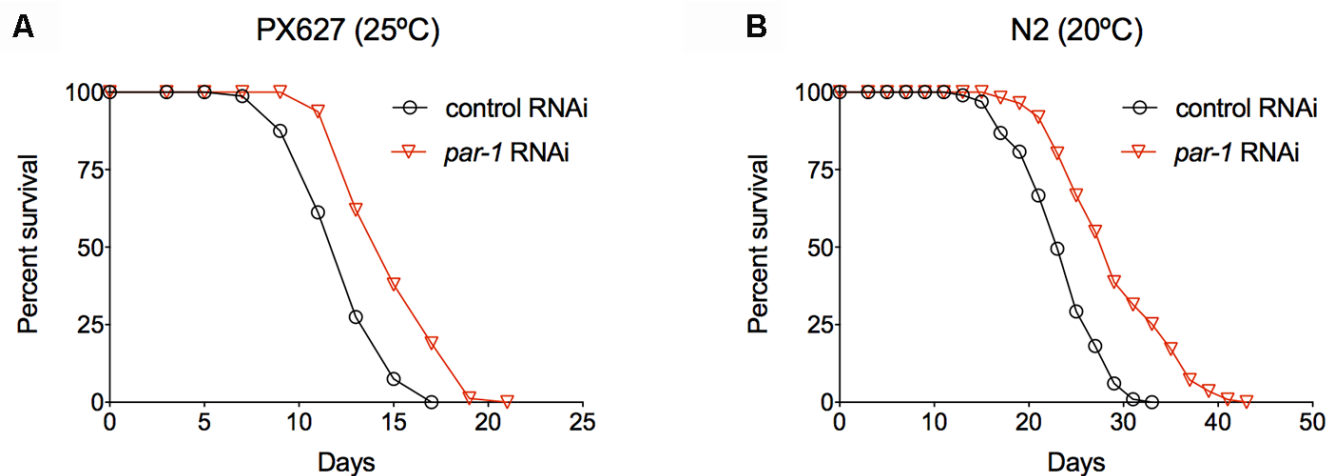
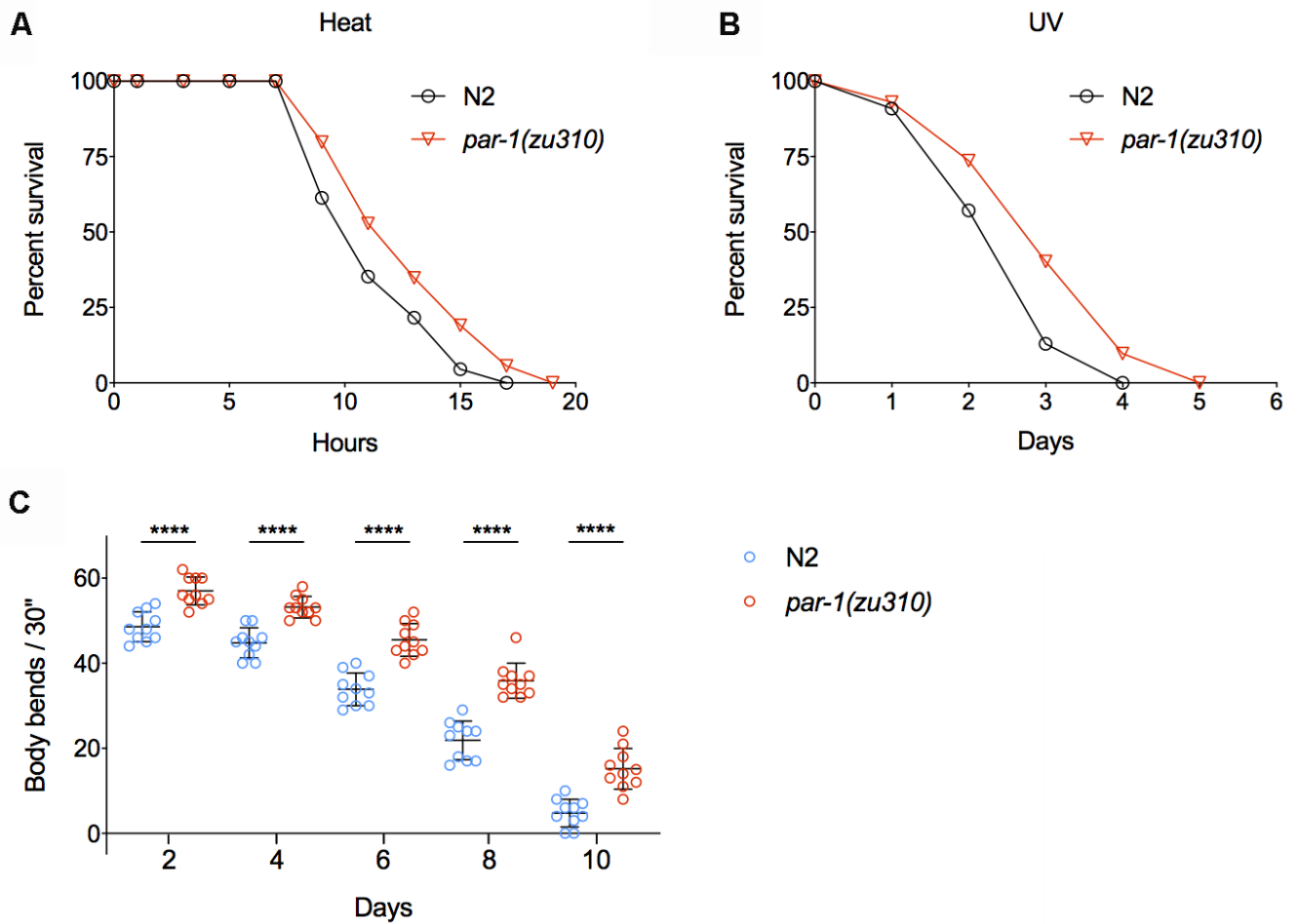


## SUPPLEMENTARY FIGURES

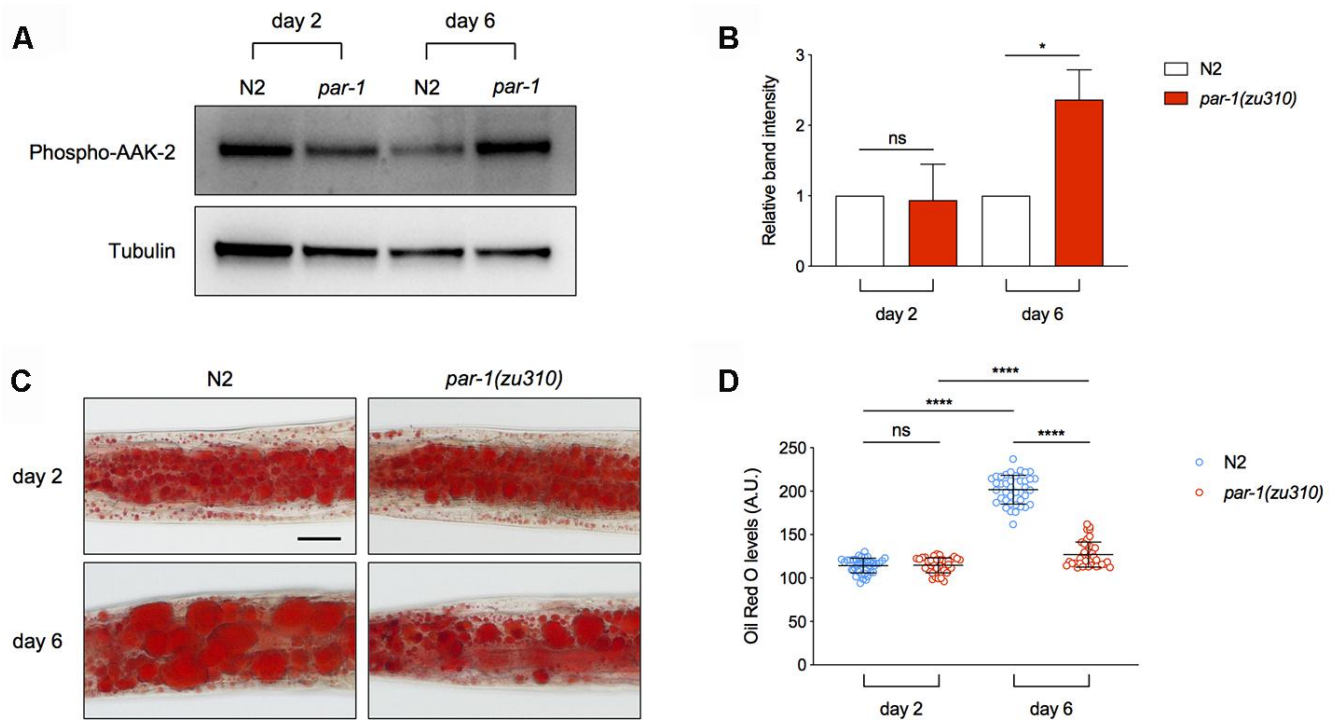


### Supplementary Figure 1. Lifespan extension induced by *par-1* RNAi knockdown is not dependent on FUDR or temperature.

(A) Survival curves of the auxin-inducible infertility strain PX627 treated with either the control or *par-1* RNAi during adulthood at 25° C. The *par-1* RNAi treatment significantly extends lifespan by 21% ( $p < 0.0001$ , log-rank test). (B) Survival curves of the wild-type N2 treated with either the control or *par-1* RNAi during adulthood at 20° C. The *par-1* RNAi treatment significantly extends lifespan by 23% ( $p < 0.0001$ , log-rank test).



**Supplementary Figure 2. The *par-1(zu310)* mutant shows significantly improved healthspan.** (A) Survival curves of the wild-type N2 and *par-1(zu310)* animals at 35°C ( $p = 0.0007$ , log-rank test). (B) Survival curves of the wild-type N2 and *par-1(zu310)* animals upon UV (2,000 J/m<sup>2</sup>) exposure ( $p = 0.0001$ , log-rank test). (C) Body bending rates of N2 and *par-1(zu310)* on day 2, 4, 6, 8, and 10 of adulthood (\*\*\*\*,  $p < 0.0001$ , two-way ANOVA with Sidak's multiple comparison tests).



**Supplementary Figure 3. The *par-1(zu310)* mutant shows AMPK activation and decreased lipid levels in the metabolic tissue.** (A, B) Immunoblots (A) and quantification (B) of phospho-AAK-2 and tubulin using proteins extracted from dissected intestinal tissues of the wild-type N2 and *par-1(zu310)* mutant animals. Ratio of the phospho-AAK-2 band intensity to that of tubulin was normalized to the wild-type N2 animals. Data are represented as mean  $\pm$  SD based on two independent biological replicates. ns, not significant, \*,  $p = 0.0443$  (unpaired t-tests). (C, D) Representative Oil Red O staining images (C) and quantification (D) of the staining signal in the wild-type N2 and *par-1(zu310)* mutant day 2 and day 6 adult animals. Data are represented as mean  $\pm$  SD. ns, not significant, \*\*\*\*,  $p < 0.0001$  ( $n = 40$ , two-way ANOVA with Sidak's multiple comparisons tests). Scale bar, 50  $\mu$ m.