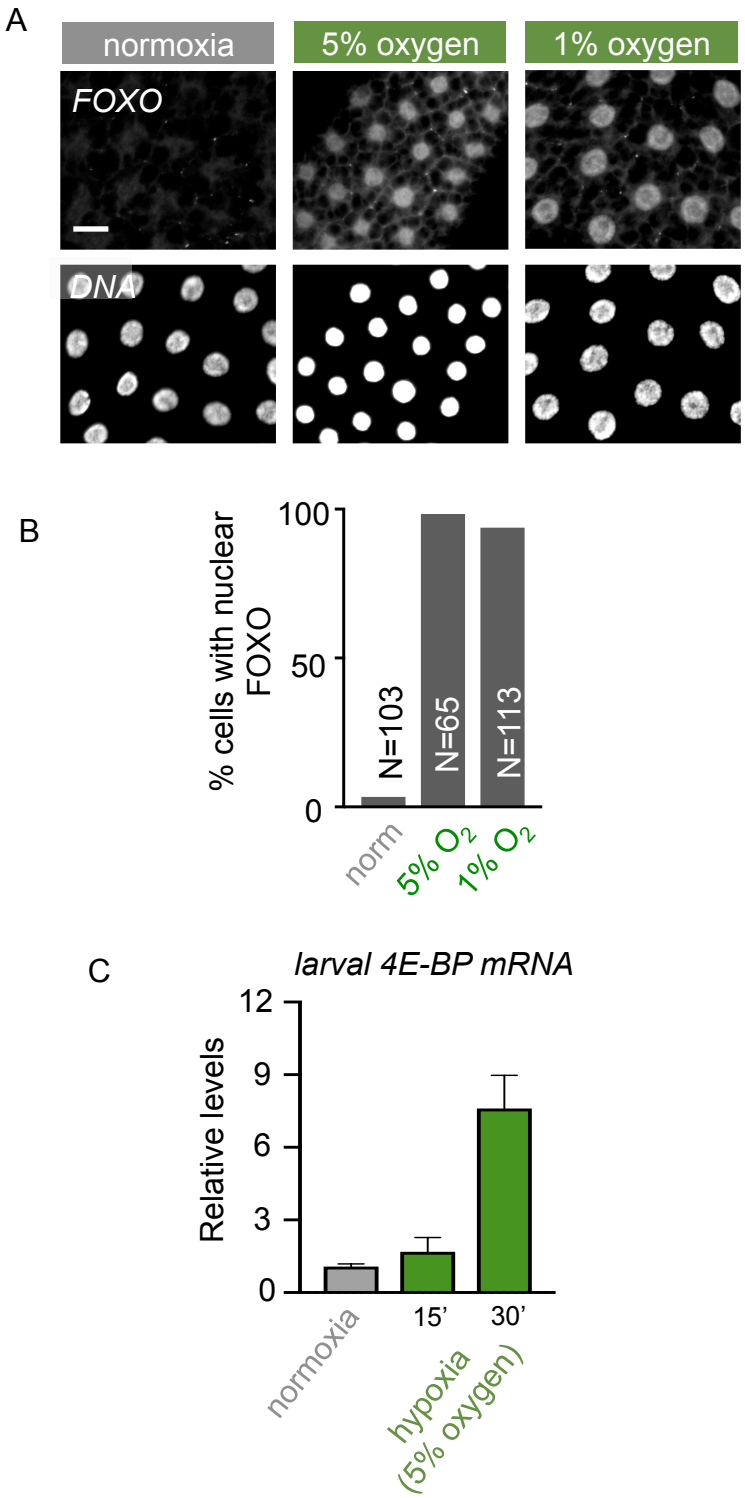

Figure S1(corresponding to Figure 1). FOXO is induced rapidly in hypoxia. (A) FOXO staining of 96-hour AEL w^{1118} larval fat bodies following exposure to hypoxia for 15 minutes. Nuclei are stained with Hoechst (bottom panels). Scale bar is 25 μm. (B) Quantification of FOXO nuclear localization in fat body cells following 15 min of hypoxia (5% and 1% oxygen exposure in third instar larvae. N= total number of cells analyzed. (C) *4e-bp* mRNA levels measured by qRT-PCR in control (w^{1118}) larvae exposed to either normoxia or hypoxia (1% oxygen) for 15 or 30 minutes. Data represent mean + SEM, N=10, *p<0.05, students t-test.

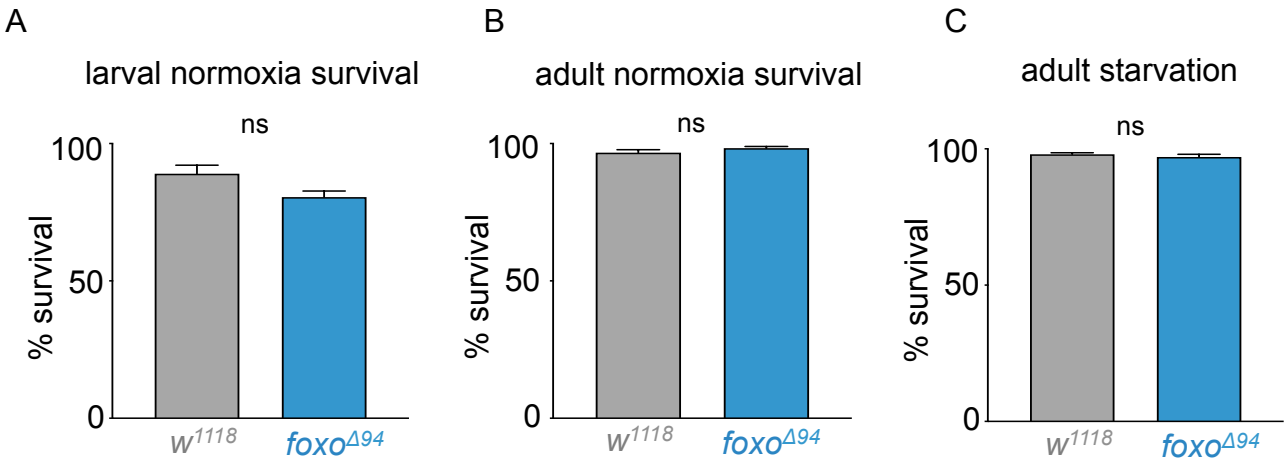

Figure S2 (corresponding to Figure 2). *foxo* mutant survival is not affected in normoxia or by short-term nutrient deprivation. (A) Data represent percentage of hatched w^{1118} and $foxo^{\Delta 94}$ larvae that develop to viable adults in normoxia. (B) Survival of adult female w^{1118} and $foxo^{\Delta 94}$ flies maintained in normoxia. Data represented as mean + SEM for n=4 groups of 20 flies. (C) Survival of adult female w^{1118} and $foxo^{\Delta 94}$ flies after starvation for 24 hours. Data represented as mean + SEM for n=4 groups of 20 flies.

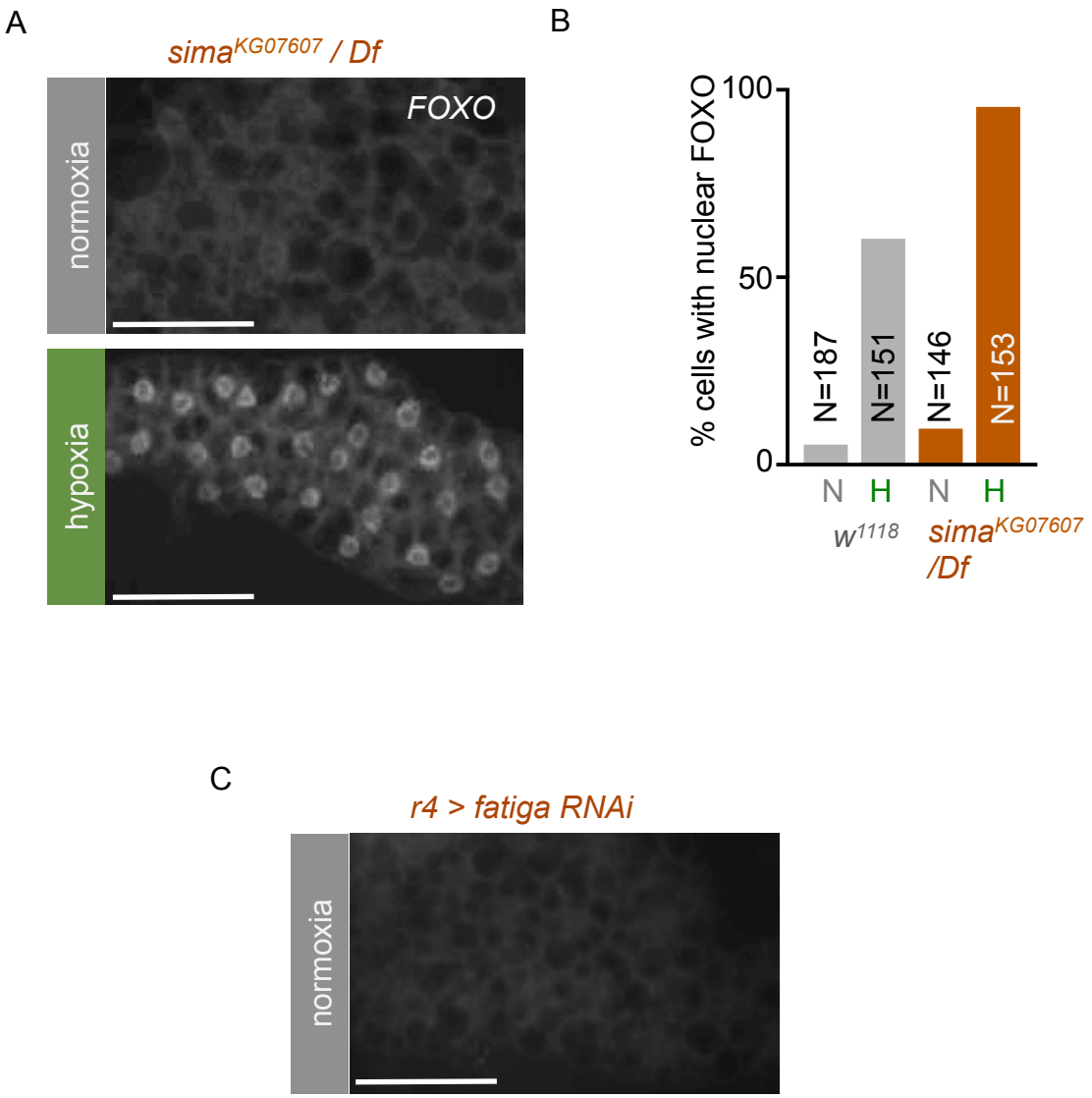

Figure S3 (corresponding to Figure 4). Hypoxia induces FOXO independently of *sima*/HIF-1 alpha. (A) FOXO staining of 96-hour AEL *sima/Df* mutant larval fat bodies following exposure to either normoxia or 5% O_2 hypoxia for 2hrs at 96-hour AEL. Scale bar is 50 μm. (B) Quantification of FOXO nuclear localization in fat body cells of control (w^{1118}) and *sima/Df* mutant larvae exposed to either normoxia or 5% O_2 hypoxia for 2hrs at 96-hour AEL. N= total number of cells analyzed. (C) FOXO staining of fat bodies from 96-hour AEL *r4-gal4 > UAS-fatiga IR* larvae. Scale bar is 50 μm

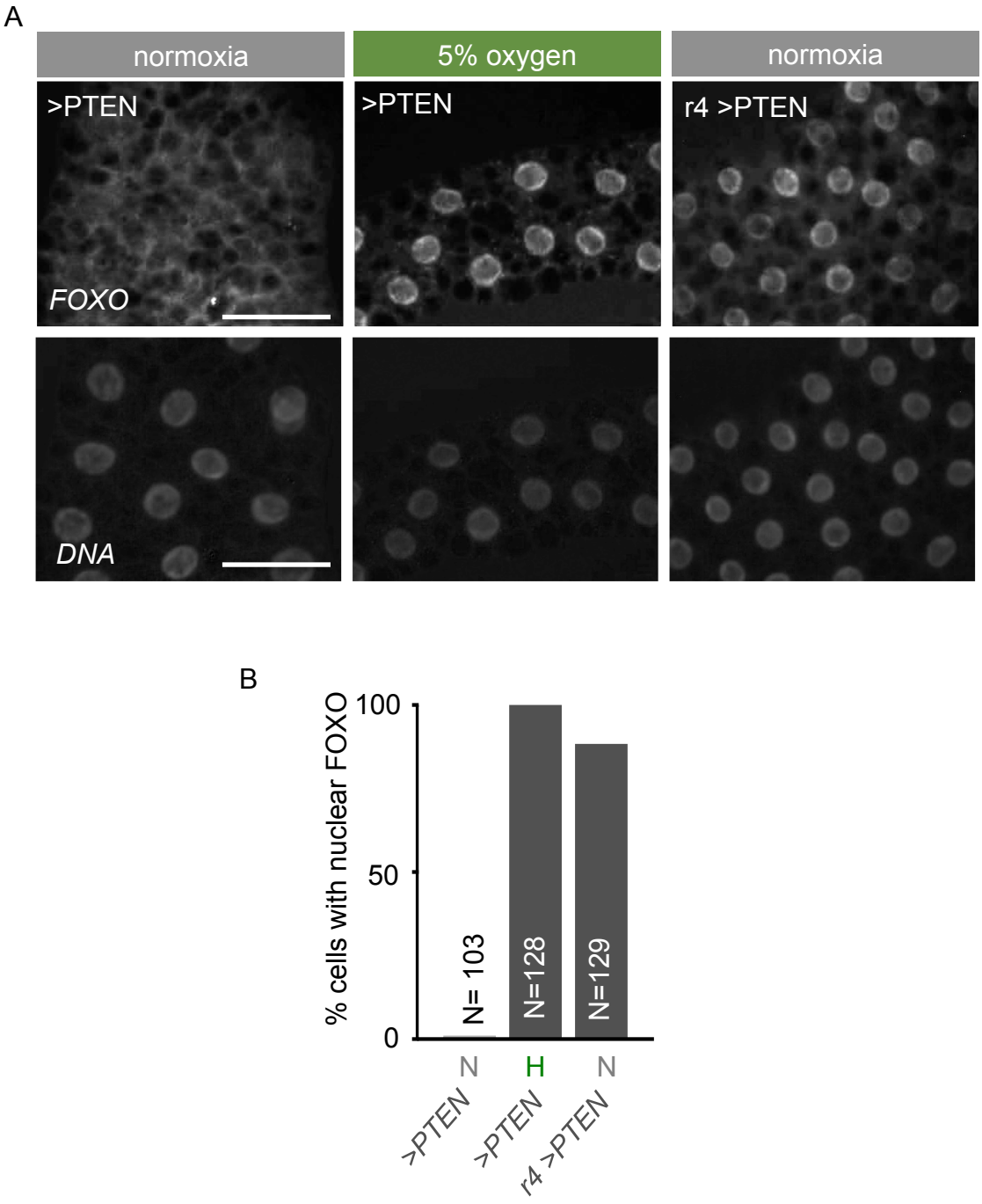

Figure S4 (corresponding to Figure 5). Hypoxia induces FOXO by inhibiting PI3K/Akt. (A) FOXO nuclear localization in fat body cells from larvae exposed to either normoxia or 5% O_2 hypoxia for 2hrs at 96-hour AEL. Genotypes: *>PTEN* (*UAS-PTEN/+); r4>PTEN (UAS-PTEN/+; r4-GAL4/+)*. Scale bar is 50 *μ*m. (B) Quantification of FOXO nuclear localization in fat body cells from larvae exposed to either normoxia or 5% O_2 hypoxia for 2hrs at 96-hour AEL. Genotypes: *>PTEN* (*UAS-PTEN/+); r4>PTEN (UAS-PTEN/+; r4-GAL4/+).* N= total number of cells analyzed.

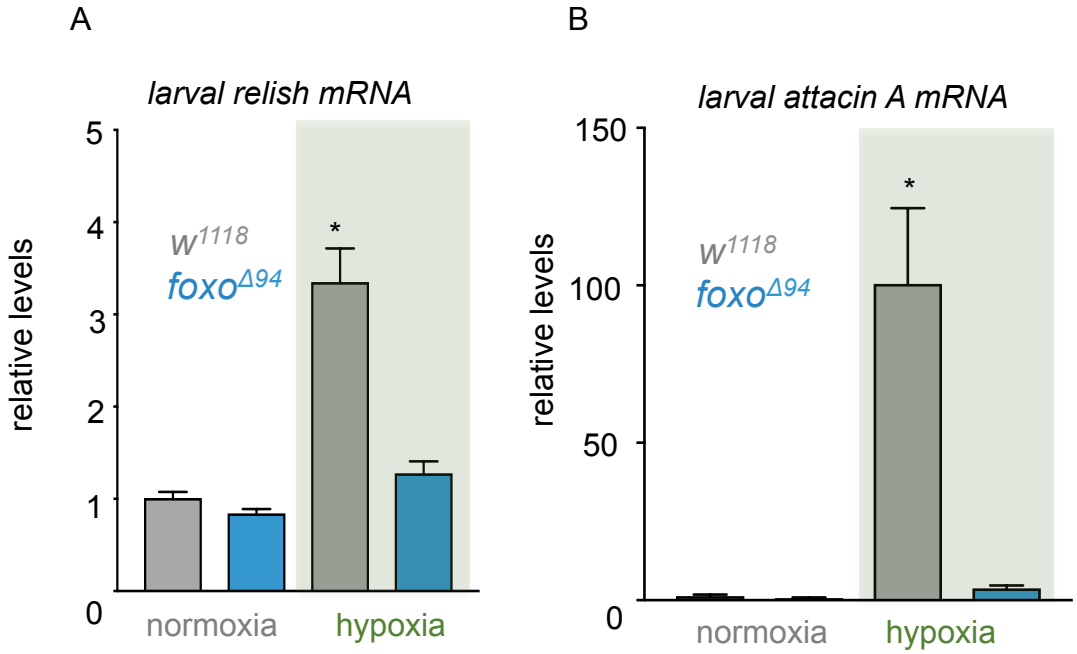

Figure S5. *relish* is induced by FOXO in hypoxic larvae. Expression levels of (A) *relish* or (B) *attacin* A mRNA in w^{1118} and $foxo^{\Delta 94}$ larvae exposed to 5% O_2 for 6 hours. Data represent mean + SEM, N=10, *p<0.05, 2-way ANOVA followed by students t-test.

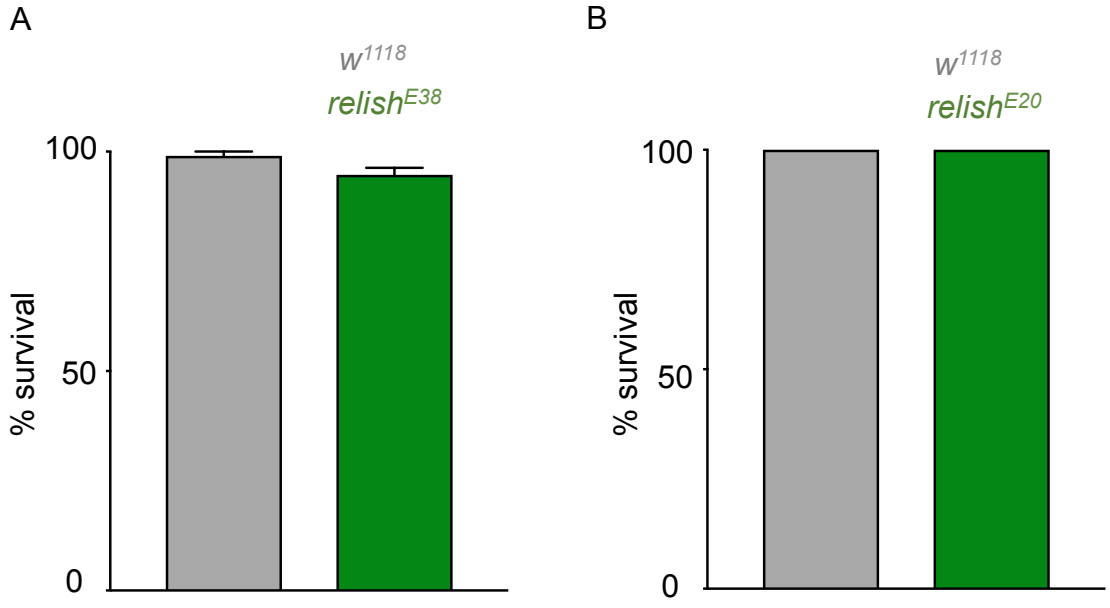

Figure S6 (corresponding to Figure 7). *Relish* mutant survival is not affected in normoxia. (A, B) Survival of adult female w^{1118} or (A) $relish^{E38}$ or (B) $relish^{E20}$ flies maintained in normoxia. Data represents mean + SEM, N= *p<0.05, students t-test.

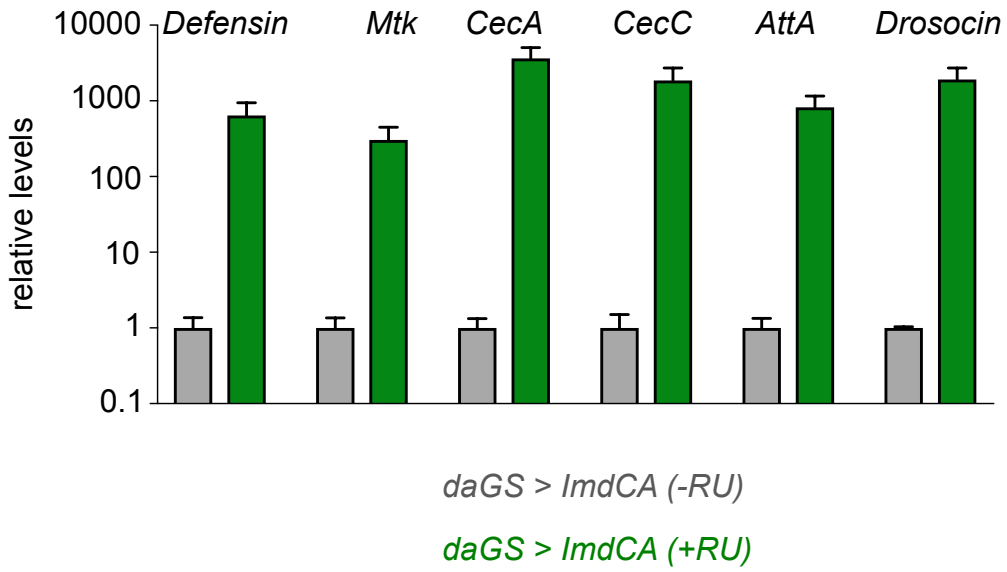

Figure S7 (corresponding to Figure 7). ImdCA expression induces expression of relish target genes. Data show relative mRNA levels for Relish target genes measured by qRT-PCR from *da-GAL4GeneSwitch > UAS ImdCA* adult females flies with (+RU) or without (-RU) feeding of RU486 to induce Gal4-mediated transgene expression. N=6 per condition. Data represent mean + SEM. * p, 0.05, students t-test.