Supplementary Figure Legends

SUPPLEMENTARY FIGURE 1:

Relative expression of *dSir2* to show knockdown and overexpression in muscles (A-B) and fatbody (E-F). Relative expression of *dSir2* in the muscles of *pSw-S₁106-Gal4>Sir2^RNAi (23201)* (C-D) and *pSw-S₁106-Gal4>Sir2^EP2300* (G-H) flies. n= 60. Western blots to showing tissue specific knockdown of *dSir2* in the muscles of *pSw-MHC-Gal4>Sir2^RNAi (23201)* (I) and fatbody of *pSw-S₁106-Gal4>Sir2^RNAi (23201)* (J). n= 15X3 flies.

SUPPLEMENTARY FIGURE 2:

Relative expression of *dPGC1*, *dCyt.C-p*, *dCOX-IV, TFAM* and *Delg* in the muscles of *pSw-MHC-Gal4>Sir2^RNAi (23199)*, *pSw-MHC-Gal4>Sir2^RNAi (23201)*, *pSw-MHC-Gal4>Sir2^EP2384*, *pSw-MHC-Gal4>Sir2^EP2300*, normalized to *rp49* (A-E). n=36 flies.

SUPPLEMENTARY FIGURE 3:

Relative expression of *dPGC1*, *dCyt.C-p*, *dCOX-IV,TFAM* and *Delg* in the muscles of *pSw-S₁106-Gal4>Sir2^RNAi (23199)*, *pSw-S₁106-Gal4>Sir2^RNAi (23201)*, *pSw-S₁106-Gal4>Sir2^EP2384*, *pSw-S₁106-Gal4>Sir2^EP2300*, normalized to *rp49* (A-E). n=36 flies.

SUPPLEMENTARY FIGURE 4:

p-AKT and AKT levels in the muscles of *S₁106-Gal4>Sir2^RNAi (23199)* and *pSw-S₁106-Gal4>Sir2^EP2384* (A and B) n= 15X3 flies. Relative expression of *dilps -2* and *-5* in head samples of *S₁106-Gal4>Sir2^RNAi (23199)* and *pSw-S₁106-Gal4>Sir2^EP2384* (B-C) and *pSw-MHC-Gal4>Sir2^RNAi (23199)* and *pSw-MHC-Gal4>Sir2^EP2384* (D-E). n= 24 flies.

SUPPLEMENTARY FIGURE 5:

Relative levels of ATP and mtDNA (A) and relative expression of *dPGC1, FAS, dilp2* and *dilp5* (B) in *pSw-S₁106-Gal4>mCherry^RNAi* . n= 24 flies. Relative levels of ATP and mtDNA (A) and relative expression of *dPGC1, FAS, dilp2* and *dilp5* (B) in *pSw-MHC-Gal4>mCherry^RNAi* . n= 24 flies.

SUPPLEMENTARY FIGURE 6:

Total triglyceride levels in the fatbody of *pSw-S₁106-Gal4> Sir2^RNAi(23201)* . n=36 flies

SUPPLEMENTARY FIGURE 7:

Total triglyceride levels in *pSw-S₁106-Gal4>Sir2^RNAi(23201)*, *pSw-S₁106-Gal4>FOXO-WT+Sir2^RNAi(23201)*, *pSw-S₁106-Gal4>FOXO-WT*

SUPPLEMENTARY FIGURE 8:

Relative expression of *brummer* in *pSw-S₁106-Gal4>Sir2^RNAi(23201)*, *pSw-S₁106-Gal4>FOXO-WT+Sir2^RNAi(23201)*, *pSw-S₁106-Gal4>FOXO-WT*.

SUPPLEMENTARY FIGURE 9:

Relative expression of inflammatory genes *egr (TNF-a)* and *18w (IL-2)* in the fatbody of *pSw-S$_1$106-Gal4> Sir2$^{RNAi(23201)}$* normalized to *Actin5c* (A) and *rp49* (B). n= 15X3 flies.

SUPPLEMENTARY FIGURE 10:

Normalized expression of *dilp2* in head samples of *pSw-S$_1$106-Gal4> Sir2$^{RNAi(23201)}$* , *pSw-S$_1$106-Gal4>FOXO-TM +Sir2$^{RNAi(23201)}$* and *pSw-S$_1$106-Gal4>FOXO-TM* flies. n=24

SUPPLEMENTARY FIGURE 11:

Relative expression of *dSir2* and *DNA J-H* in the fatbody of *pSw-S$_1$106-Gal4>Sir2^{EP2300}* and *pSw-S$_1$106-Gal4>Sir2^{EP2384}* (A and B) and muscles of *pSw-MHC-Gal4>Sir2^{EP2300}*, *pSw-MHC-Gal4>Sir2^{EP2384}* (C and D) at varying concentrations of RU486. n= 24 flies.

SUPPLEMENTARY FIGURE 12:

Relative expression of *dInR* in the muscles of *pSw-MHC-Gal4>Sir2$^{RNAi(23201)}$* . n= 24 flies

SUPPLEMENTARY TABLE 1:

List of primers used for qRT-PCR.

GENE	PRIMER SEQUENCES
Actin5C	F: GAGGCTTGCGGCATCCACGAGACCAC R: GACAGAGTACTTGCGCTCTGGCG
Brummer	F: TCCCGAGTTTCTGTCCAAGT R: GCGTCCTTTCTGTGCTTCTT
dCOXIV	F: ACCAACGAGATCAACGCTCT R: GCGCAGAAGAGGAGTGAAAC
dCyt-C-p	F: TTCCTGCTGGTGATGTTGAG R: GTGTCCTCGTTCCAGGTGAT
dilp2	F: AGCAAGCCTTTGTCCTTCATCTC R: ACACCATACTCAGCACCTCGTTG
dilp5	F: GAGGCACCTTGGGCCTATTC R: CATGTGGTGAGATTCGGAGCTA
DNA J-H	F: ATACGACCTGTCCGACTTGCGATG R: TTCTGCTCTACGAAACCACTGCCC
d4eBP	F: AACCCTCTACTCCACCACTC R: CAATCTTCAGCGACTTGG
Delg	F: ACTACGTCATCCATGAATCC R: TCGTAATAGTAGCGGAGAGC
dFOXO	F: GAACCAGTCGGAATGCAAGT R: ACCCTCATAAAGCGGTTGTG
dInR	F: ACGATGTAGAGGGCAGTGTA R: TACCACGAAGATAGCGTAGC
dPGC1	F: CCAAGCAGGCGAAAATAGAG R: TACGCAGCACCTTGTTCTTG
dSir2	F: GAACGAGCAACGAGGATGAG R: ATAGTCCCACAGCACGGAGT
FAS	F: CGGAGAAGAGTTACATCCTG R: CAATCACCACCTTTACGC
rp49	F: TACAGGCCCAAGATCGTGAA R: TCTCCTTGCGCTTCTTGGA