SUPPLEMENTARY DATA

Supplementary Table 1. Sequences of qPCR primers.

Lpl	Forward Primer 5'-GGACGGTAACGGGAATGTATG-3' Reverse Primer 5'-ACGTTGTCTAGGGGGTACTTAAA -3'
Fatp1 (Slc27a1)	Forward Primer 5'-CGCTTTCTGCGTATCGTCTG-3' Reverse Primer 5'-GATGCACGGGATCGTGTCT-3'
Fatp4 (Slc27a4)	Forward Primer 5'-TGAGATGGCCTCAGCTATCTG-3' Reverse Primer 5'-TGCCCGATGTGTAGATGTAGAA-3'
Cd36	Forward Primer 5'-CCGAGGACCACACTGTGTC-3' Reverse Primer 5'-AACCCCACAAGAGTTCTTTCAAA-3'
Acsl1	Forward Primer 5'-ACCACCTTCTGGTATGCCAC-3' Reverse Primer 5'-TGACATCGTCGTAGTAGTACACC-3'
Gpam	Forward Primer 5'-ACGCACACAAGGCACAGAG-3' Reverse Primer 5'-TGCTGCTCAGTACATTCTCAGTA-3'
Agpat2	Forward Primer 5'-CTGGTTCGTTCGGTCCTTCAA-3' Reverse Primer 5'-CTTGGCGATCTGCACACAG-3'
Dgat1	Forward Primer 5'-TCCGTCCAGGGTGGTAGTG-3' Reverse Primer 5'-TGAACAAAGAATCTTGCAGACGA-3'
Dgat2	Forward Primer 5'-TTCCTGGCATAAGGCCCTATT-3' Reverse Primer 5'-AGTCTATGGTGTCTCGGTTGAC-3'
Plin1	Forward Primer 5'-AGATCCCGGCTCTTCAATACC-3' Reverse Primer 5'-AGAACCTTGTCAGAGGTGCTT-3'
Atgl	Forward Primer 5'-CAACGCCACTCACATCTACGG-3' Reverse Primer 5'-TCACCAGGTTGAAGGAGGGAT-3'
Hsl	Forward Primer 5'-GGCTCACAGTTACCATCTCACC-3' Reverse Primer 5'-GAGTACCTTGCTGTCCTGTCC-3'
Mgll	Forward Primer 5'-CGGACTTCCAAGTTTTTGTCAGA-3' Reverse Primer 5'-GCAGCCACTAGGATGGAGATG-3'
Lpin1	Forward Primer 5'-CTCCGCTCCCGAGAGAAAG-3' Reverse Primer 5'-TCATGTGCAAATCCACGGACT-3'
Got2	Forward Primer 5'-CCTGGGCGAGAACAATGAAGT-3' Reverse Primer 5'-ATGGGCGTGTGATTTCCCC-3'
Cav1	Forward Primer 5'-GCGACCCCAAGCATCTCAA-3' Reverse Primer 5'-ATGCCGTCGAAACTGTGTGT-3'
Cav2	Forward Primer 5'-TCACCAGCTCAACTCTCATCT-3' Reverse Primer 5'-GCCAGAAATACGGTCAGGAACT-3'
Fitm2	Forward Primer 5'-TCGGTCGTCAAGGAGCTGT-3' Reverse Primer 5'-CAAAATACACGTTGAGGACGTTG-3'
Nr1h2	Forward Primer 5'-GCCTGGGAATGGTTCTCCTC-3' Reverse Primer 5'-AGATGACCACGATGTAGGCAG-3'
Nr1h3	Forward Primer 5'-GTCAACTGGGGTTGCTTTAGG-3' Reverse Primer 5'-GACGAAGCTCTGTCGGCTC-3'
Acsl4	Forward Primer 5'-CCTGAGGGGCTTGAAATTCAC-3' Reverse Primer 5'-GTTGGTCTACTTGGAGGAACG-3'
Acsl5	Forward Primer 5'- AACCAGTCTGTGGGGATTGAG -3' Reverse Primer 5'- CGTCTTGGCGTCTGAGAAGTA -3'
Agpat6	Forward Primer 5'-AACCTCCTGGGTATCTCCCTG-3' Reverse Primer 5'-CCGTTGGTGTAGGGCTTGT-3'
Agpat9	Forward Primer 5'-CGGATTATCCCTGGGTATCTCG-3' Reverse Primer 5'-CGAAGTCCCTTCCTCGAAGAC-3'

Mogat1	Forward Primer 5'-CTCGTGCAGGTGTGCATTG-3' Reverse Primer 5'-GCGTTTTGACAAGACAGATTGG-3'
Pnpla3	Forward Primer 5'-TCACCTTCGTGTGCAGTCTC-3' Reverse Primer 5'-CCTGGAGCCCGTCTCTGAT-3'
Abhd5	Forward Primer 5'-TGGTGTCCCACATCTACATCA-3' Reverse Primer 5'-CAGCGTCCATATTCTGTTTCCA-3'
Fabp4	Forward Primer 5'-AAGGTGAAGAGCATCATAACCCT-3' Reverse Primer 5'-TCACGCCTTTCATAACACATTCC-3'
Fabp5	Forward Primer 5'-TGAAAGAGCTAGGAGTAGGACTG-3' Reverse Primer 5'-CTCTCGGTTTTGACCGTGATG-3'
Ef1α	Forward Primer 5'-CACATCCCAGGCTGACTGT-3' Reverse Primer 5'-TCGGTGGAATCCATTTTGTT-3'
Bmal 1	Forward Primer 5'-ATCAGCGACTTCATGTCTCC-3' Reverse Primer 5'-CTCCCTTGCATTCTTGATCC-3'
Per2	Forward Primer 5'-GCCAAGTTTGTGGAGTTCCTG-3' Reverse Primer 5'-CTTGCACCTTGACCAGGTAGG-3'
Dbp	Forward Primer 5'-AATGACCTTTGAACCTGATCCCGCT-3' Reverse Primer 5'-GCTCCAGTACTTCTCATCCTTCTGT-3'

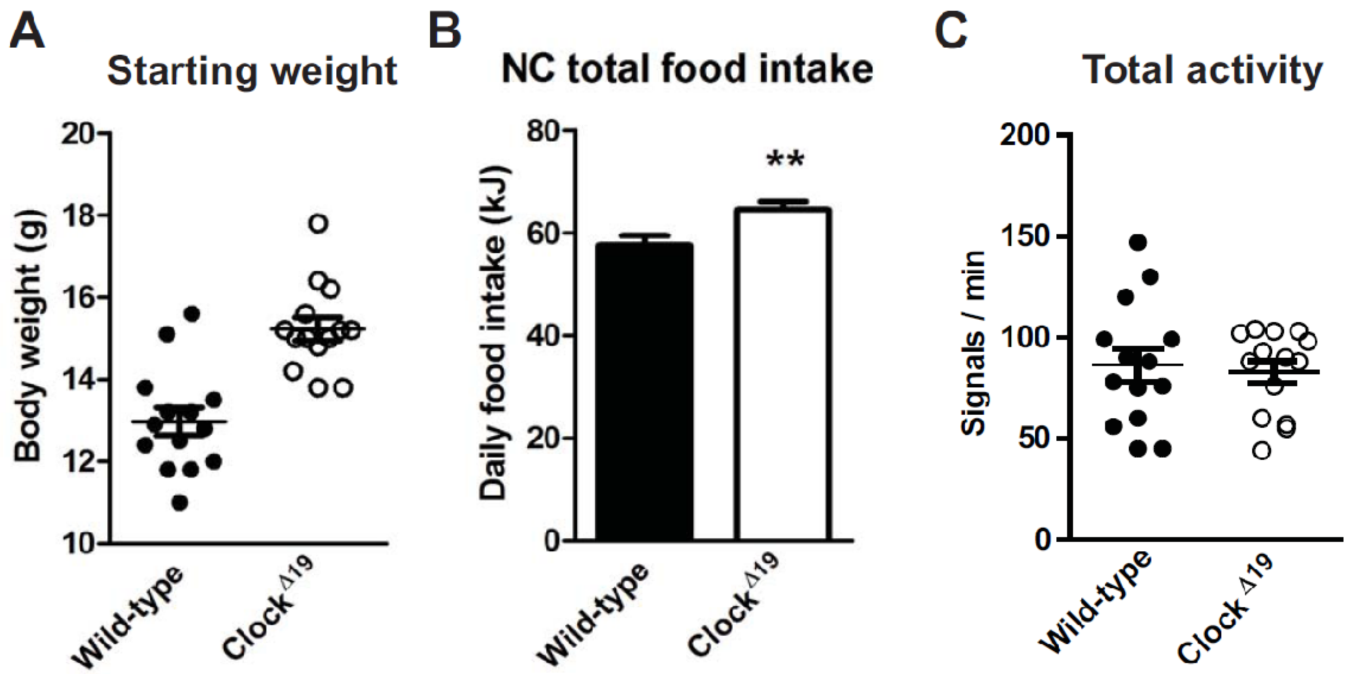
Supplementary Table 2. Sequences of cloning and mutagenesis primers

Atgl promoter and 1st intron cloning	Fw Pr. 5'-CTCGGCGGCCAAGCTTTCAAACCCCAGGATCTTCAACTA-3' Rev Pr. 5'-TCTTGATATCCTCGAGCAGCATTCCCAGCTTAGTAACCA-3'
Mutation of the E-box in the Atgl 1st intron	Fw Pr. 5'-CCGTCTTCCCATGCTAGGCGGATCCCCATACCATGTTAGGCAC-3' Rev Pr.5'-GTGCCTAACATGGTATGGGGATCCGCCTAGCATGGGAAGACGG-3'
Hsl promoter cloning	Fw Pr. 5'- GCAGGCATGCAAGCTTCTTTGCGCTGCCCTTATAGT -3' Rev Pr. 5'- CCGGAATGCCAAGCTTGCCCTCACAGCAGGAATAGT -3'
Mutation of the first E-box in the Hsl promoter	Fw Pr. 5'-AAAAAAAAAACAGGGACGACGGATCCAGGGGGCGGAGGAAAAGGC - 3' Rev Pr. 5'- GCCTTTTCCTCCGCCCCCTGGATCCGTCGTCCCTGTTTTTTTTT-3'
Mutation of the second E- box in the Hsl promoter	Fw Pr. 5'- CCCGCCTTTTCCGGGGGGATCCGGCTCCCTCGACTTA -3' Rev Pr. 5'- TAAGTCGAGGGAGCCGGATCCCCCCGGAAAAGGCGGG -3'

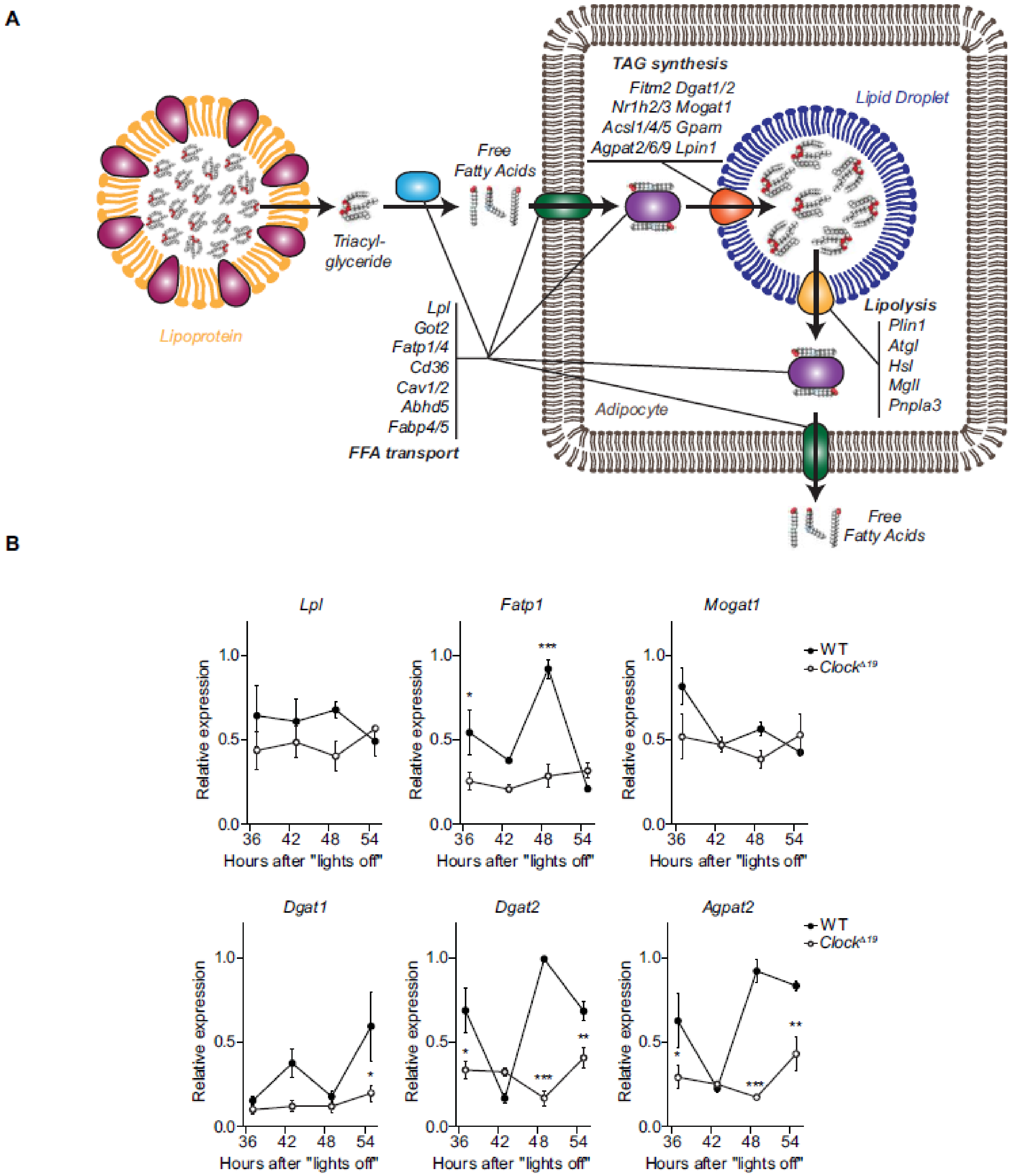
Supplementary Table 3. Sequences of ChIP primers

Dbp E-box	Fw Pr. 5'-TGGGACGCCTGGGTACAC-3' Rev Pr. 5'-GGGAATGTGCAGCACTGGTT-3'
Dbp 500bp	Fw Pr. 5'-CGTGGAGGTGCTTAATGACCTTT-3' Rev Pr.5'-CATGGCCTGGAATGCTTGA-3'
Atgl E-box	Fw Pr. 5'-GGTGATGGTTGAAGTAGGTCAGA-3' Rev Pr. 5'-TATTTCCCAACTGCCTGTCC-3'
Atgl 500bp	Fw Pr. 5'-TTCAGACGGAGAGAACGTCA-3' Rev Pr. 5'-GCAGTGCCTACCTGGATGAG-3'
Hsl E-box	Fw Pr. 5'-AGCCTAGGACCCTGTCTGG-3' Rev Pr. 5'-TCACGTGGTCGTCCCTGTT-3'
Hsl 500bp	Fw Pr. 5'-AACTTGATCGCTGGAATTGG-3' Rev Pr. 5'-GGCTCCATCAATTCTTTCCA-3'

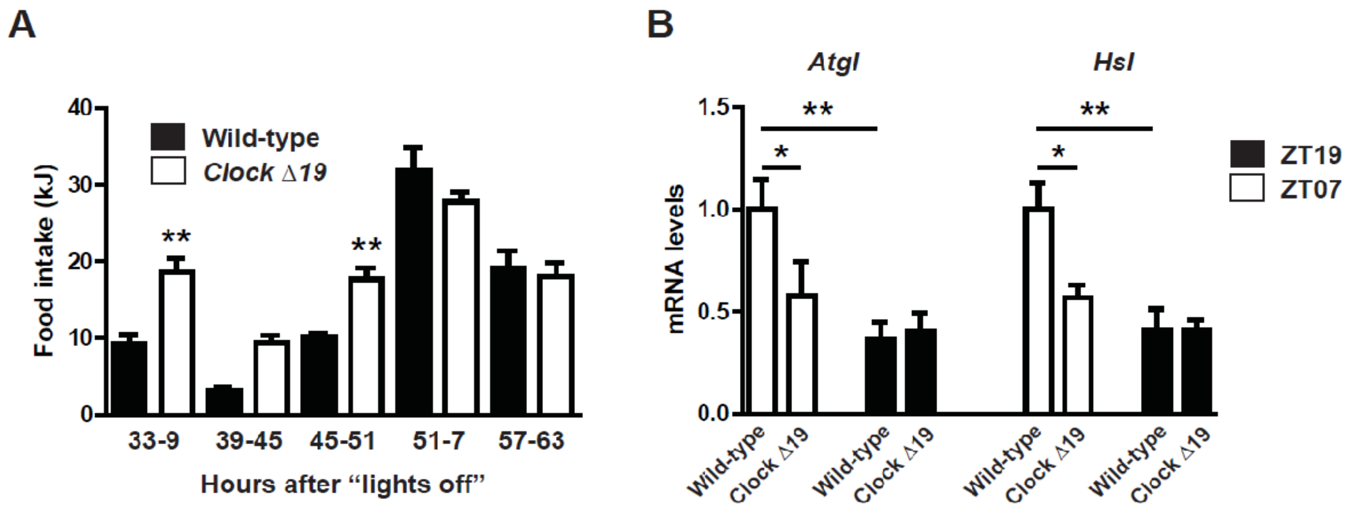
Supplementary Figure 1. Starting weight, food intake and activity in Clock mutant mice. A: Starting weight of Clock$^{\Delta 19}$ and wild-type animals at the beginning of the feeding period (4 weeks of age). B: Daily food intake under normal chow conditions. C: Total home cage activity (measured by passive infrared detection). Error bars are SEM (n = 14); **p<0.01 by Student's t-test.



Supplementary Figure 2. Circadian clock control of TG metabolism in WAT. A: Schematic overview of tested genes involved in WAT TG metabolism (assembled from Gene Ontology and BioGPS databases and literature studies). B: Circadian expression profiles of candidate genes from (Fig. 3A) involved in FFA transport and TG synthesis in WAT samples from wild-type (closed circles) and Clock$^{\Delta 19}$ (open circles) mice in DD (n=3 per time point). *p < 0.05, **p < 0.01, ***p < 0.001 by 2-way ANOVA with Bonferroni post-test). All data are shown as means ± SEM.



Supplementary Figure 3. Feeding profiles in DD and Atgl/Hsl mRNA regulation under nighttime restricted feeding conditions. A: Food intake after release into DD in wild-type and Clock $^{\Delta 19}$ animals under normal chow diet. Data are means ± SEM (n = 7). **p < 0.01 Clock$^{\Delta 19}$ vs. wild-type by 2-way ANOVA with Bonferroni post-test. B: Atgl and Hsl mRNA levels in WAT of wild-type and Clock $^{\Delta 19}$ animals kept under nighttime restricted feeding conditions (i.e. food access at ZT12-24). Data are means ± SEM (n = 4). *p < 0.05; **p < 0.01 by 2-way ANOVA with Bonferroni post-test.



Supplementary Figure 4. Sustained circadian clocks in adipose tissues. A: Representative PER2::LUCIFERASE recordings from perirenal WAT and interscapular BAT explants. B: Phase map (occurrence of the first peak) of PER2::LUCIFERASE oscillations from WAT and BAT depots relative to the last "lights on" (n=3-4). C-D: Period (C) and dampening rates (D) of PER2::LUCIFERASE oscillations from different fat depots (n=4). E: Bioluminescence recordings of Atgl-luc, Hsl-luc and Bmal1-luc reporters from transiently transfected NIH-3T3 cells after serum shock. Raw data was 24-h baseline- subtracted and smoothened using a 1-h running average. F: Oscillation phase (occurrence of the first peak) of Atgl-luc, Hsl-luc and Bmal1-luc luminescence rhythms from transiently transfected NIH-3T3 cells after serum shock (n=3-4). *p < 0.05, ***p < 0.001 by 1-way ANOVA with Bonferroni post-test. All data are shown as means ± SEM.