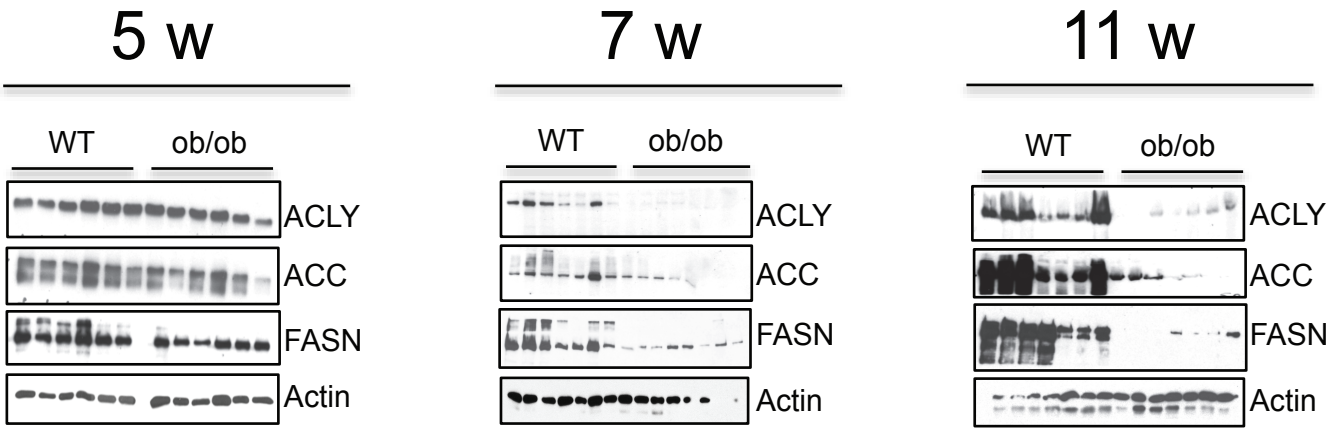
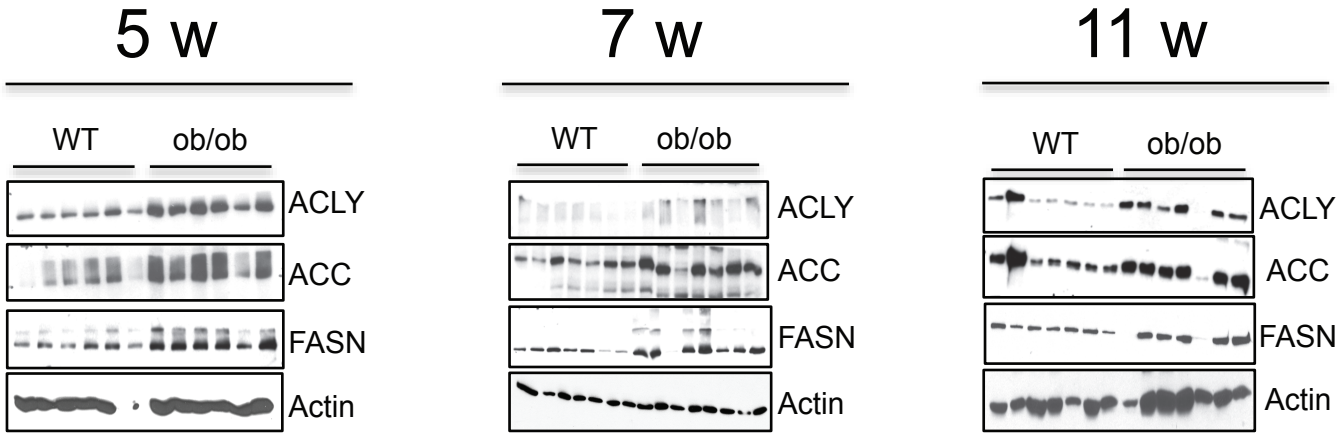
A

iWAT



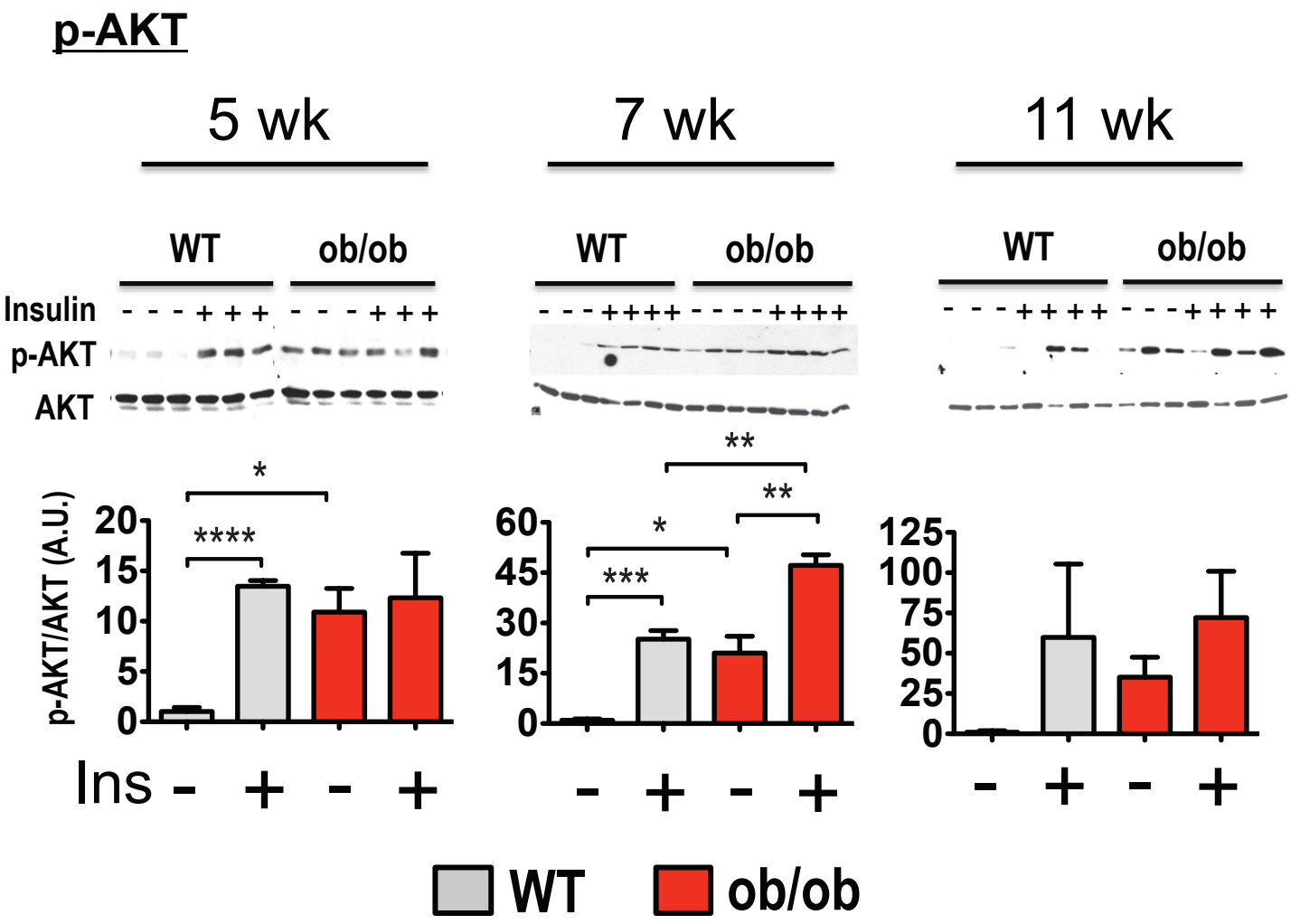
B

Liver

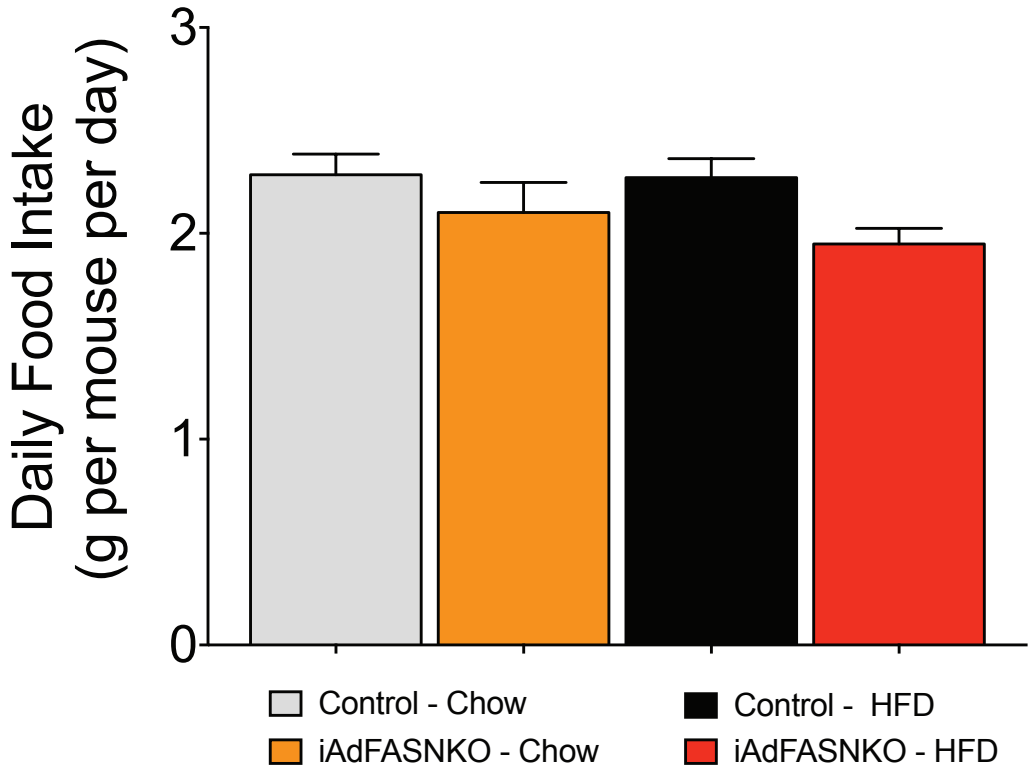


Supplementary Figure 1: Shown are the immunoblots used for quantification by densitometry and shown in Figure 1B. Depicted are immunoblots to detect ACLY, FASN and ACC protein levels in iWAT fat **(A)** or liver tissues **(B)** from WT control or ob/ob mice at 5, 7 and 11 weeks of age. N = 4 – 5 mice per group.

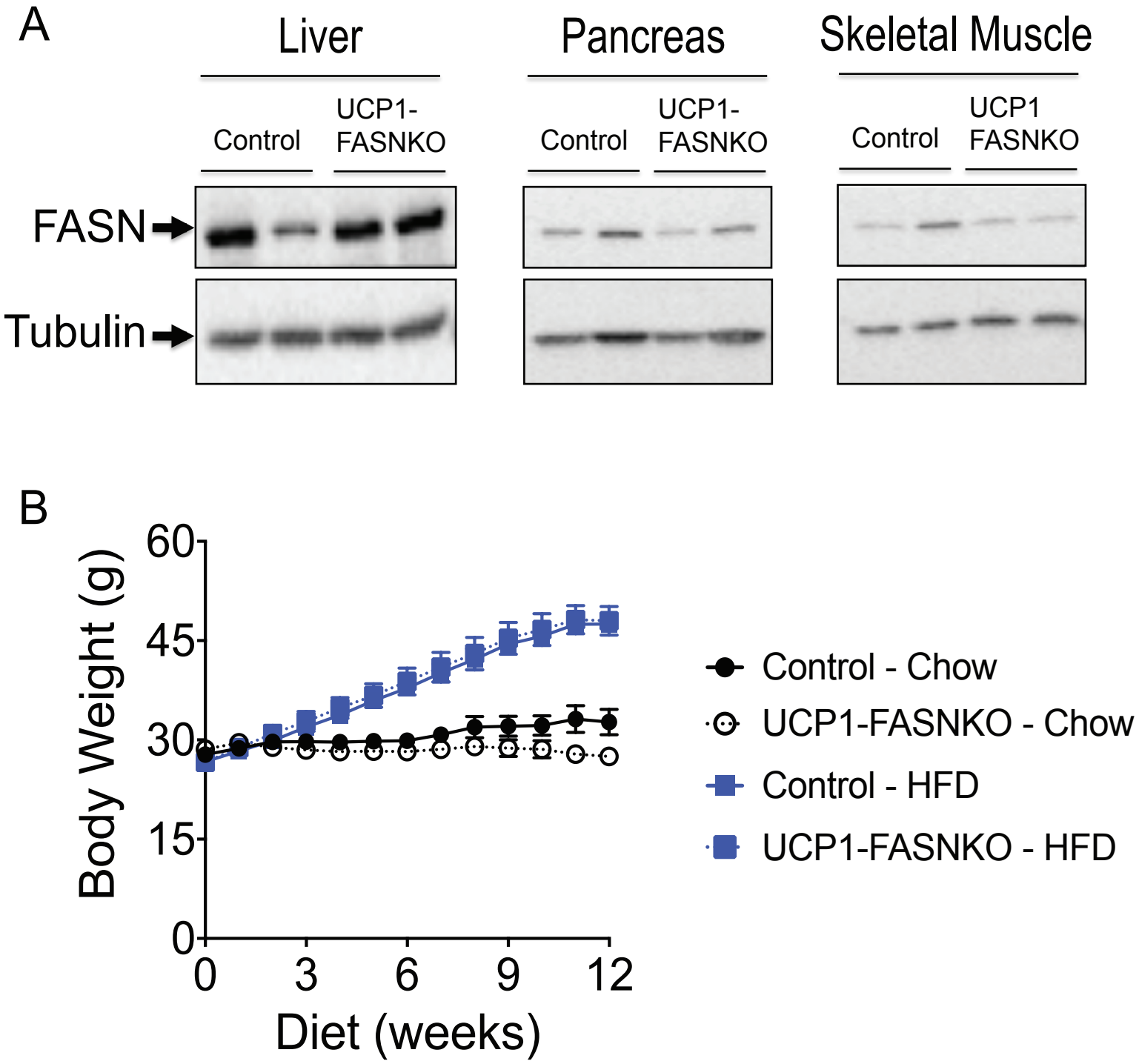
Liver



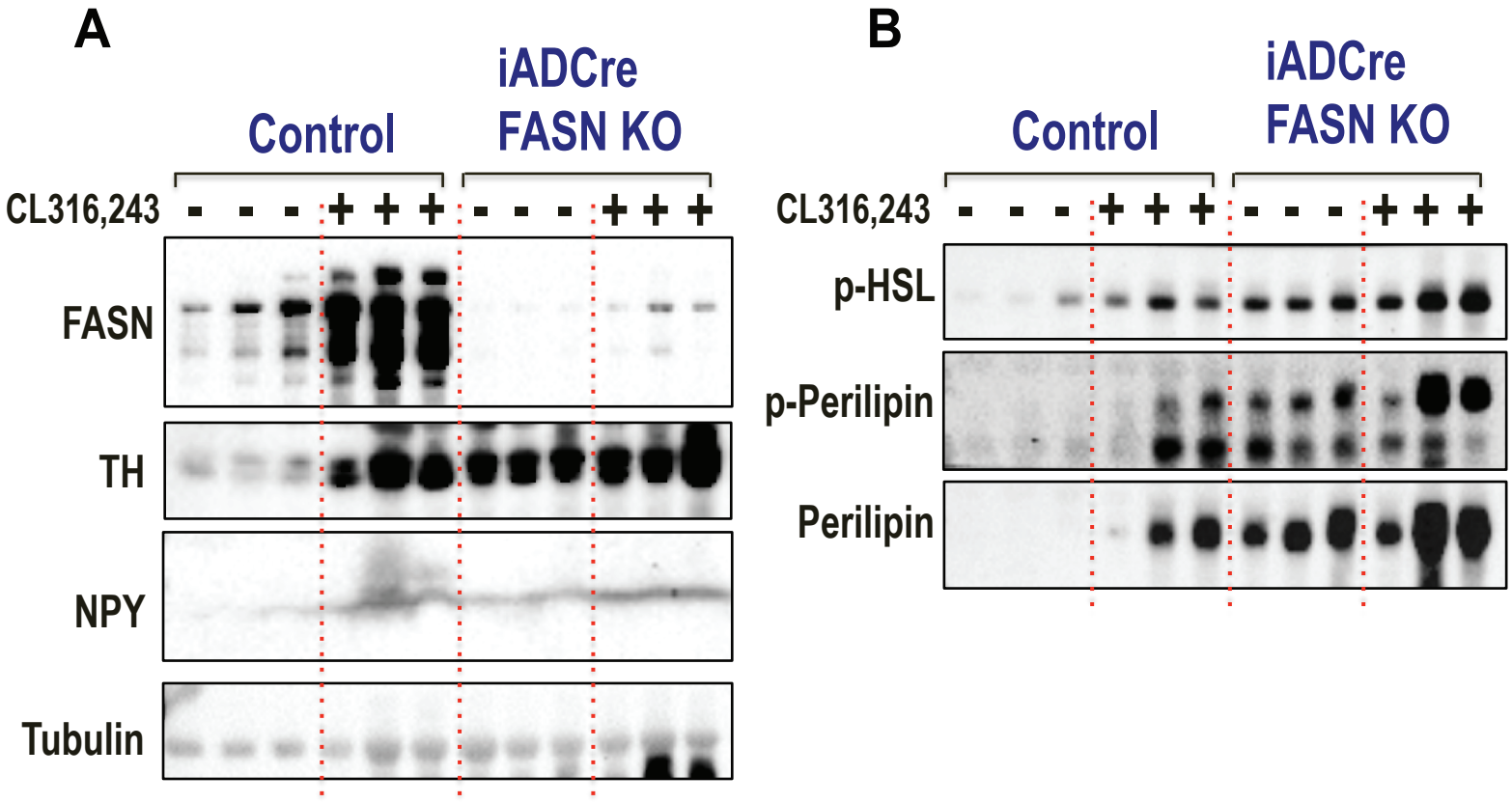
Supplementary Figure 2: Representative protein immunoblot of AKT phosphorylation in liver tissue, in response to a bolus insulin injection (1 U/kg). Bottom panels depict densitometry analysis of the data from the Westerns described for top panel (N = 6 or 7). Graphs show the mean -/+ SEM. N = 5 to 7 per group, compared with WT controls, by Student's t test. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$; **** $P < 0.0001$.



Supplementary Figure 3: Food intakes were measured at 3 and 13 weeks post-TAM treatment. Though attenuation of glucose intolerance **(Figure 4G)** was observed, no significant changes in food intake were noted in iAdFASNKO mice.
N=4 to 6 mice per group.



Supplementary Figure 4: (A) Liver, pancreas and skeletal muscle tissue lysates from control and UCP1-FASNKO mice were immunoblotted for FASN or tubulin protein as indicated.
(B) Body weight gain in control and UCP1-FASNKO mice were fed with chow or HFD for 12 weeks. N = 3-6 mice per group.



Supplementary Figure 5: FASN deletion and β3-adrenoreceptor stimulation in adipocytes of mature mice increases tyrosine hydroxylase (TH) and neuropeptide Y (NPY) content and activates the PKA signaling pathway in iWAT. Depicted are representative immunoblots to detect FASN, TH, NPY and tubulin (A), phospho-HSL, phospho-perilipin and perilipin (B) levels in iWAT from control, CL316,243-treated mice or iAdFASNKO mice.

Gene	Forward	Reverse
PPARγ1	GACTACCCTTTACTGAAATTACC	GTGGTCTTCCATCACGGAGA
PPARγ2	ATGGGTGAAACTCTGGGAG	GTGGTCTTCCATCACGGAGA
SREBP1c	GGCCCGGGAAGTCACTGT	GGAGCCATGGATTGCACATT
SREBP2	GCAGCAACGGGACCATTCT	CCCCATGACTAAGTCCTTCAACT
ChREBPα	CGACACTCACCCACCTCTTC	TTGTTCAGCCGGATCTTGTC
ChREBPβ	TCTGCAGATCGCGTGGAG	CTTGTCCCGGCATAGCAAC
FASN	GGAGGTGGTGATAGCCGGTAT	TGGGTAATCCATAGAGCCCAG
ELOVL6	TCAGCAAAGCACCCGAAC	AGCGACCATGTCTTTGTAGGAG
ACLY	ACCCTTTCACTGGGGATCACA	GACAGGGATCAGGTATTCCTTG
SCD1	TTCTTGCGATACACTCTGGTGC	CGGGATTGAATGTTCTTGTCG
GLUT4	GTGACTGGAACACTGGTCCTA	CCAGCCACGTTGCATTGTAG
PEPCK	CTGCATAACGGTCTGGACTTC	CAGCAACTGCCCGTACTCC
DGAT2	GCGCTACTTCCGAGACTACTT	GGGCCTTATGCCAGGAAACT
PDK4	AGGGAGGTCGAGCTGTTCTC	GGAGTGTTCACTAAGCGGTCA
ACC1	TGTACAAGCAGTGTGGGCTGGCT	CCACATGGCCTGGCTTGGAGGG
ACC2	GGAGGCTGCATTGAACACAAGT	TGCCTCCAAAGCGAGTGACAAA
ME1	ATCACTTTGGATGTGGGAACAG	CAGGAAGGCGTCATACTCAGG
MDH1	AAGGCATGGAGAGGAAGGAC	AGTTCGTATTGGCTGGGTTTC
UCP1	ACTGCCACACCTCCAGTCATT	CTTTGCCTCACTCAGGATTGG
CIDEA	ATCACAACTGGCCTGGTTACG	TACTACCCGGTGTCCATTTCT
PGC1α	AGCCGTGACCACTGACAACGAG	GCTGCATGGTTCTGAGTGCTAAG
PRDM16	CAGCACGGTGAAGCCATTC	GCGTGCA TCCGCTTGTG
PPARα	TATGGAGTGACATAGAGTGTGCT	CCACTTCAATCCACCCAGAAAG
ELOVL3	TTCTCACGCGGGTTAAAAATGG	GAGCAACAGATAGACGACCAC
TH	GTCTCAGAGCAGGATACCAAGC	CTCTCCTCGAATACCACAGCC
36B4	TCCAGGCTTTGGGCATCA	CTTTATCAGCTGCACATCACTCAGA
HPRT	TCAGTCAACGGGGGACATAAA	TCAGTCAACGGGGGACATAAA
GAPDH	AGGTCGGTGTGAACGGATTTG	TGTAGACCATGTAGTTGAGGTCA

Supplementary Table 1: Primer sequences used in qRT-PCR analysis