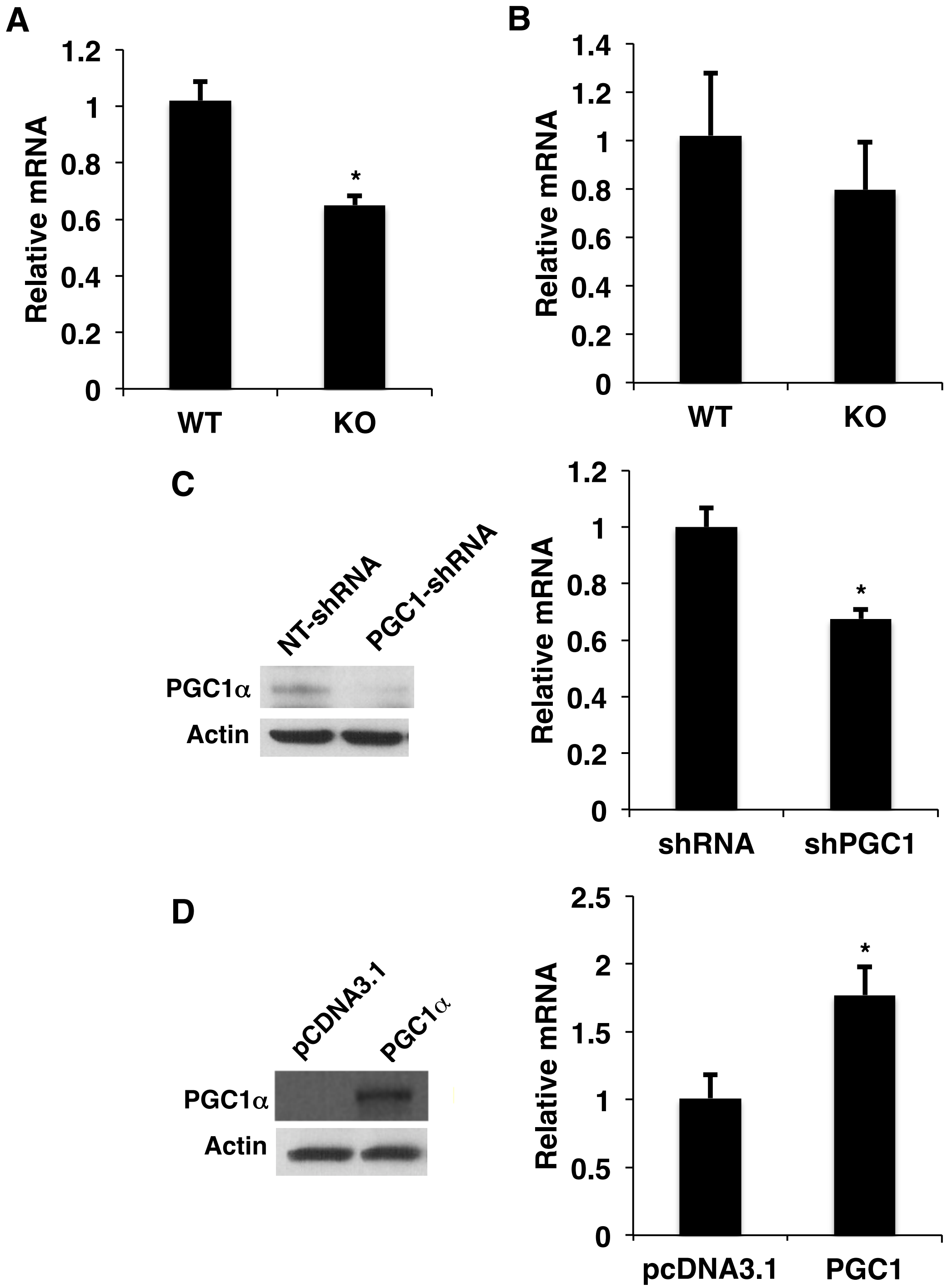
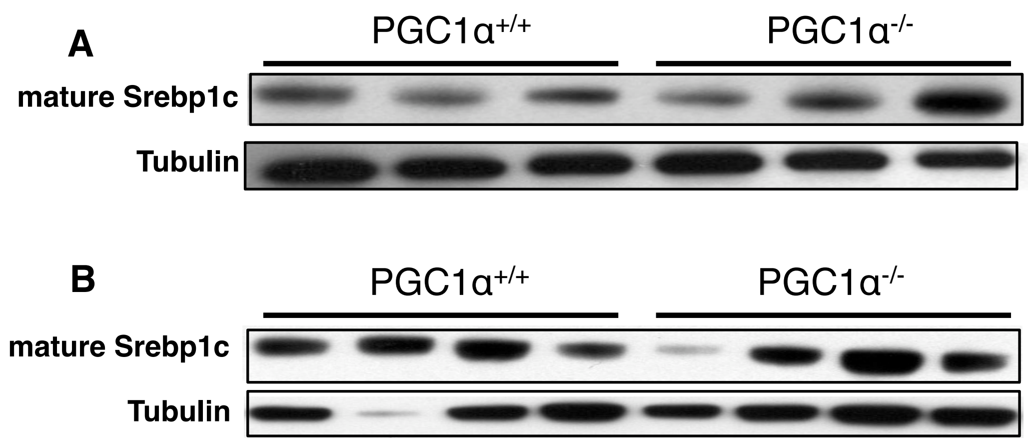
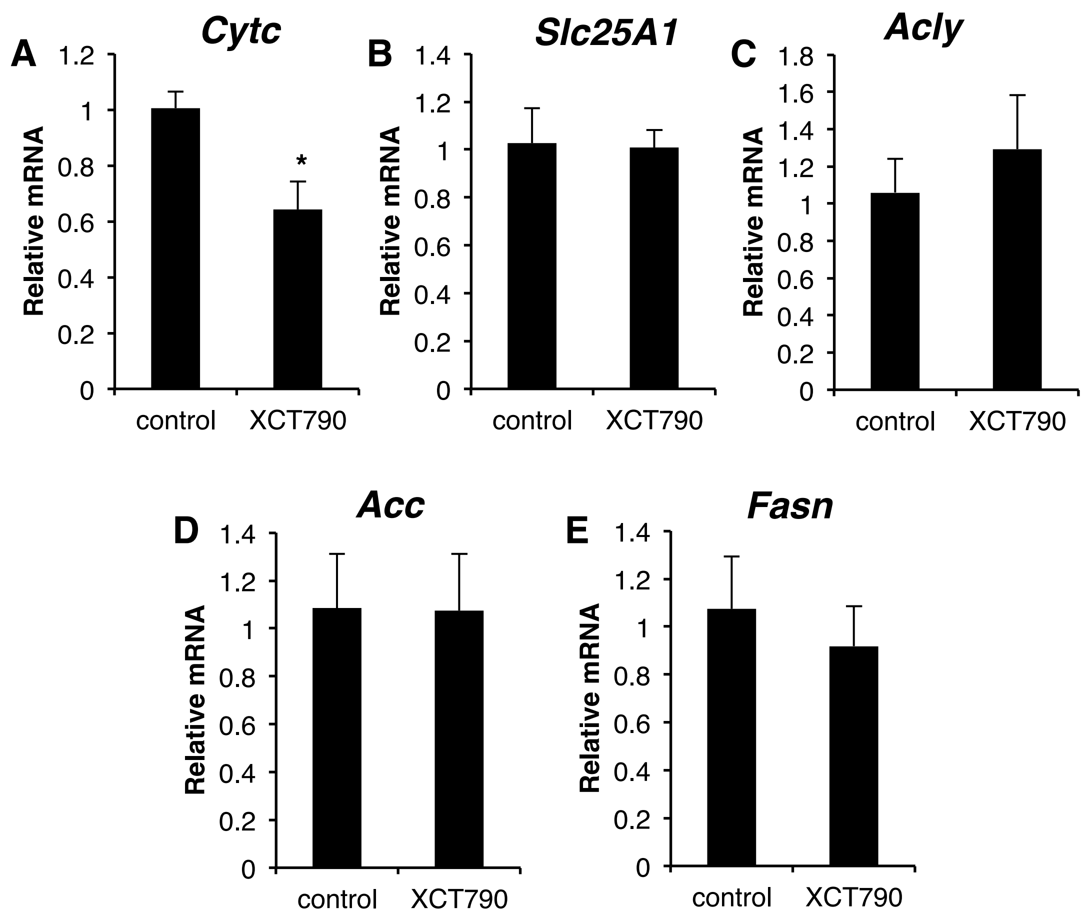
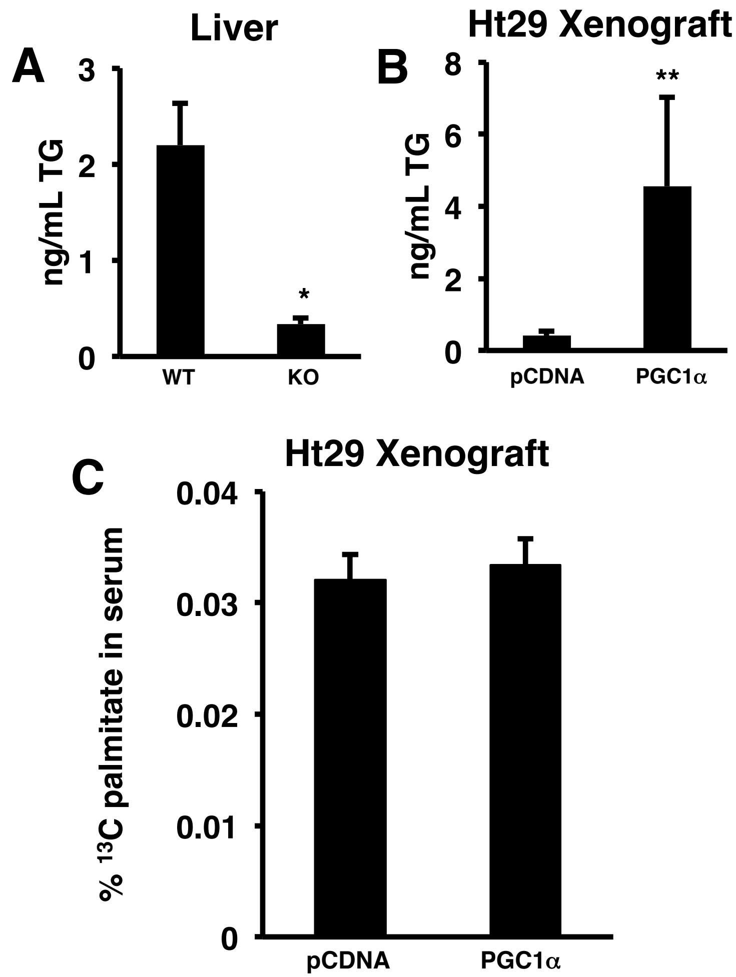

A
Relative mRNA
1.2
1
0.8
0.6
0.4
0.2
0
*
WT
KO
B
Relative mRNA
1.4
1.2
1
0.8
0.6
0.4
0.2
0
WT
KO
C
NT-shRNA
PGC1-shRNA
PGC1α
Actin
Relative mRNA
1.2
1
0.8
0.6
0.4
0.2
0
*
shRNA
shPGC1
D
pCDNA3.1
PGC1α
PGC1α
Actin
Relative mRNA
2.5
2
1.5
1
0.5
0
*
pcDNA3.1
PGC1


A
PGC1α+/+
PGC1α-/-
mature Srebp1c
Tubulin
B
PGC1α+/+
PGC1α-/-
mature Srebp1c
Tubulin



A
Cytc
Relative mRNA
1.2
1
0.8
0.6
0.4
0.2
0
*
control
XCT790
B
Slc25A1
Relative mRNA
1.4
1.2
1
0.8
0.6
0.4
0.2
0
control
XCT790
C
Acly
Relative mRNA
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
control
XCT790
D
Acc
Relative mRNA
1.4
1.2
1
0.8
0.6
0.4
0.2
0
control
XCT790
E
Fasn
Relative mRNA
1.4
1.2
1
0.8
0.6
0.4
0.2
0
control
XCT790


Liver
A
3
2
1
0
ng/mL TG
*
WT
KO
Ht29 Xenograft
B
8
6
4
2
0
ng/mL TG
**
pCDNA
PGC1α
Ht29 Xenograft
C
0.04
0.03
0.02
0.01
0
% 13C palmitate in serum
pCDNA
PGC1α

**Supplemental figures**

**Figure 1.** Expression of PGC1β in tissues and cells with gain and loss of PGC1α. A) Pgc1β mRNA expression from colons of Pgc1α+/+ (WT) and Pgc1α-/- (KO) mice. B) Pgc1β mRNA expression from livers of WT and KO mice. C) PGC1α protein and Pgc1β mRNA expression in non-target control (NT-shRNA) and PGC1α knockdown (PGC1-shRNA) cells. D) PGC1α protein and Pgc1β mRNA expression in vector control (pcDNA3.1) and PGC1α overexpressing (PGC1-pcDNA3.1) cells. RNA was isolated from tissues or cells and RTPCR performed for actin and PGC1β. Protein isolated from cells and western blotting performed for PGC1α. $p < 0.05$.

**Figure 2.** Loss of PGC1 does not alter the expression of mature SREBP1c protein. Protein was isolated from the A) liver and B) colons of Pgc1α+/+ and Pgc1α-/- mice. Western blotting was performed as described in materials and methods for cleaved/mature SREBP1c.

**Figure 3.** Inhibition of ERRα reduces cytochrome c, does not alter lipogenic gene expression. Mice were treated with 25 mg/kg XCT790 daily for two days and then liver harvested and RNA isolated. RTPCR was performed for A) Cytochrome B) Slc25A1 C) Acly D) Acc and E) Fasn and expression normalized to actin. $p < 0.05$.

**Figure 4**. PGC1α promotes triglyceride formation in tumors. TAG content from A) livers of Pgc1α+/+ and Pgc1α-/- mice or B) HT29 xenografts. TLC lipid analysis of C) livers of Pgc1α+/+ and Pgc1α-/- mice or D) HT29 xenografts. E) 13C labeled palmitate from plasma of mice with HT29 xenografts expressing vector control or PGC1α. TAG-triacylglycerol, DAG, Diacylglcerol, MAG monoacylglycerol, PL phospholipid. * $p < 0.0005$ ** $p < 0.05$.

Supplementary Table 1: Sequence for primers used in the study

| Name | Forward (5' seq 3') | Reverse (5'seq3') |
|---|---|---|
| hPGC1α | aac agc agc aga gac aaa tgc acc | tgc agt tcc aga gag ttc cac act |
| hCox 4i | cgg tgc cat gtt ctt cat cgg ttt | tca tgt cca gca tcc tct tgg tct |
| hCOX5B | gga aga ccc taa ttt agt ccc ct | cca gct tgt aat ggg ctc cac |
| hATPSYNF1 | cta tgc ggc gca aac atc tc | ggt ggt agt ccc tca tca aac t |
| hCYT-C | aag att gtg cca ctg cac tca agc | agg tga gca caa cag gaa ctg gaa |
| hFASN | agg ttt gat gcc tcc ttc ttc gga | tgg ctt cat agg tga ctt cca gca |
| hACC | tcg ctt tgg ggg aaa taa agt g | gtg tga cca tga caa cga ata ta |
| hACLY | aag atc tcg tgg cca atg gag tca | agg ttt gcg gat caa acc aag ctc |
| hSLC25A1 | ttc ccc acc gag tac gtg aa | gta gag cag gga gct aag gc |
| hPDHEA1 | atg cag act gta cgc cga atg | ggg tga aag taa agc cgt gag |
| hCS | ggtggcatgagaggcatgaa | tagccttgggtagcagtttct |
| hPDK1 | tcc tgg act tcg gat cag tga | cgg atg gtg tcc tga gaa gat t |
| hERRα | aat gca ctg gtg tct cat ctg ctg | tga tgg tga cca caa tct ctc ggt |
| hPGC1β | aac ttc tgg ctc aag acg tgc tct | tct tgg gtg aag ctg cga tcc tta |
| hSREBP1c | gga ggg gta ggg cca acg gcc | cat ctc ttc gaa agt gca atc c |
| hActin | ggc tgt att ccc ctc cat cg | cca gtt ggt aac aat gcc atg |
| | | |
| mPgc1α | ccc tgc cat tgt aaa gac | tgc tgc tgt tcc tgt ttt |
| mCox 4i | acc aag cga atg ctg aac at | ggc gga gaa gcc ctg aa |
| mCox5b | gct gca tct gtg aag agg aca ac | cag ctt gta atg ggt tcc aca gt |
| mAtpsynF1 | tct cca tgc ctc taa cac tcg | cca ggg tca aca gac gtg tca g |
| mCyt-C | cca aat ctc cac ggt ctg ttc | atc agg gta tcc tct ccc cag |
| mAcly | aag cct tgg aca gcg gca tca ttc | ttg agg atc tgc act cgc atg tct |
| mAcc: | gtc ccc agg gat gaa cca ata | gcc atg ctc aac caa agt agc |
| mFas | gga ggt ggt gat agc cgg tat | tgg gta atc cat aga gcc cag |
| mPdhea1 | gctggcataaaccctacggac | cct ttc cct tta gca caa cct c |
| mPdk1 | ctg gtg caa agt tgg tat atc ca | gtg ctg gtt gag tag cat tct aa |
| mCs | ggacaattttccaaccaatctgc | tcggttcattccctctgcata |
| mErrα | cct ccc gcc ttc tac agg t | cac acg gca cag tag cga g |
| m Pgc1β | gct ctg gta ggg gca gtg a | tcc tgt aaa agc ccg gag tat |
| mActin | gag acc ttc aac acc cc | gtg gtg gtg aag ctg tag cc |

h=human; m= mouse