SUPPLEMENTARY DATA

Supplementary Table 1. Sequence for primers used in the study.

Name	Forward (5' seq 3')	Reverse (5'seq3')
Mouse:		
Pgc1α	CCC TGC CAT TGT AAA GAC	TGC TGC TGT TCC TGT TTT
Cyclind1	GCG TAC CCT GAC ACC AAT CTC	CTC CTC TTC GCA CTT CTG CTC
Pepck	CAG GAT CGA AAG CAA GAC AGT	AAG TCC TCT TCC GAC ATC GAG
G6pase	GAA AAA GCC AAC GTA TGG ATT CC	CAG CAA GGT AGA TCC GGG A
Cox4i	ACC AAG CGA ATG CTG AAC AT	GGC GGA GAA GCC CTG AA
Cox5b	GCT GCA TCT GTG AAG AGG ACA AC	CAG CTT GTA ATG GGT TCC ACA GT
AtpsynF1	TCT CCA TGC CTC TAA CAC TCG	CCA GGG TCA ACA GAC GTG TCA G
Cyt-C	CCA AAT CTC CAC GGT CTG TTC	ATC AGG GTA TCC TCT CCC CAG
Actin	GAG ACC TTC AAC ACC CC	GTG GTG GTG AAG CTG TAG CC
Human:		
PGC1α ACT	AAC AGC AGC AGA GAC AAA TGC ACC	TGC AGT TCC AGA GAG TTC CAC
Cyclin D1	CCG CAC GAT TTC ATT GAA CAC	TGG CAC AAG AGG CAA CGA A
Cox 4i TCT	CGG TGC CAT GTT CTT CAT CGG TTT	TCA TGT CCA GCA TCC TCT TGG
Pepck GGA	AAG GAG GAT GCC CTG AAC CTG AAA	TGC ACC TTA TGG ATG GGA AAG
G6pase AAT	TGA ATG GCT GCA GTG ACC CAG ATA	TGG ATG TGG AGC CAG TGG AAG
Cox5b	GGA AGA CCC TAA TTT AGT CCC CT	CCA GCT TGT AAT GGG CTC CAC
ATPsynF1	CTA TGC GGC GCA AAC ATC TC	GGT GGT AGT CCC TCA TCA AAC T
CYT-C GAA	AAG ATT GTG CCA CTG CAC TCA AGC	AGG TGA GCA CAA CAG GAA CTG
Actin	GCC CGC GAG CAC AGA	CCA GGA TGG AGG GGA AGA C

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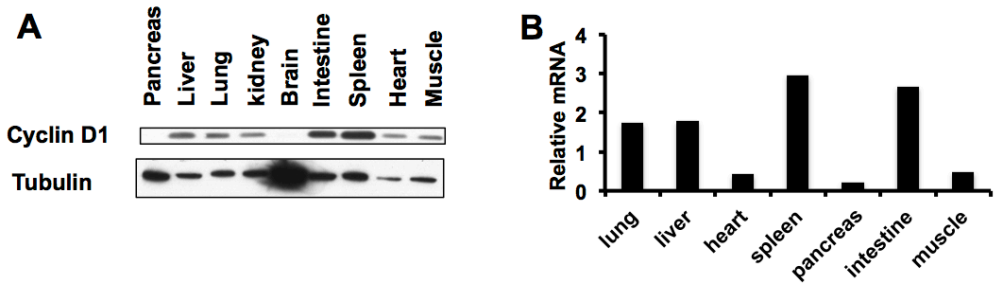
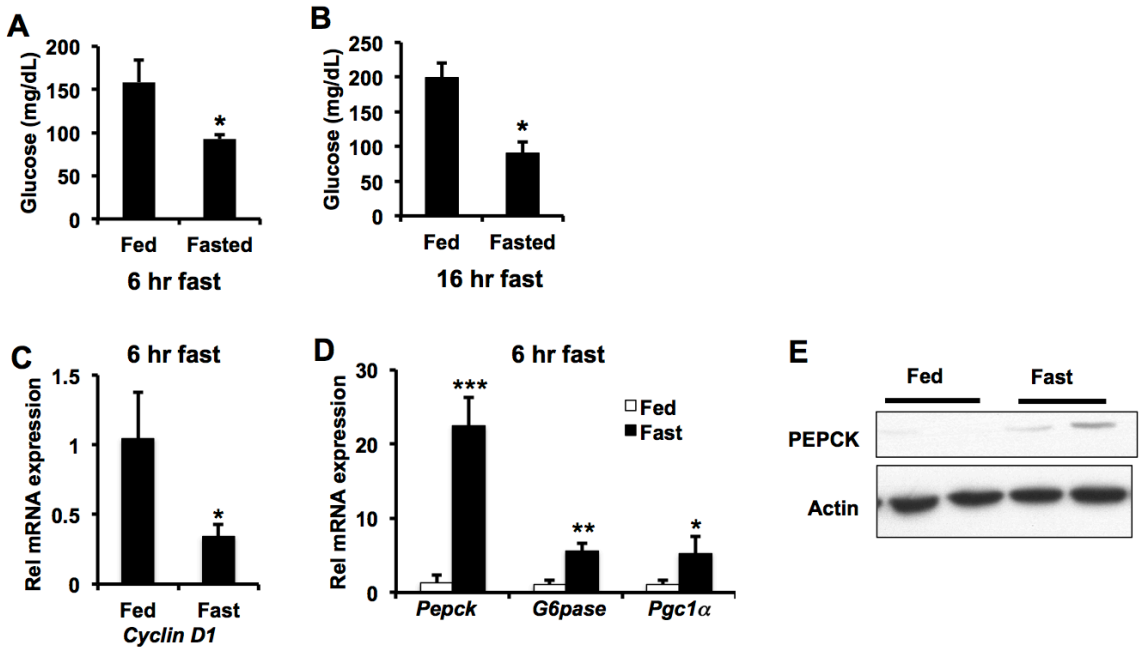
Supplementary Figure 1. A) Immunoblotting or B) RTPCR for cyclin D1. A) Wildtype C57Bl/6J mice were euthanized and pancreas, muscle, heart, small intestine, liver, lung, kidney and spleen removed. Protein and RNA were isolated. Proteins were separated by SDS PAGE and transferred to nitrocellulose. Immunoblotting was performed with cyclin D1 or tubulin B) RNA was isolated from the indicated tissues and cDNA synthesized and RTPCR performed for cyclin D1.



Supplementary Figure 2. Glucose levels were determined in fed and fasted mice. Mice were Fed or fasted for A) 6 hr or B) overnight (16 hr). Tails were docked, and blood glucose determined using a glucometer. N=6 ± SD. * $p < 0.05$. Changes in C) cyclin D1 and D) gluconeogenic gene expression following a 6 hr fast. N=4±SD, ** < 0.01, *** $p < 0.001$. E) Liver PEPCK protein expression following a 6 hr fast.



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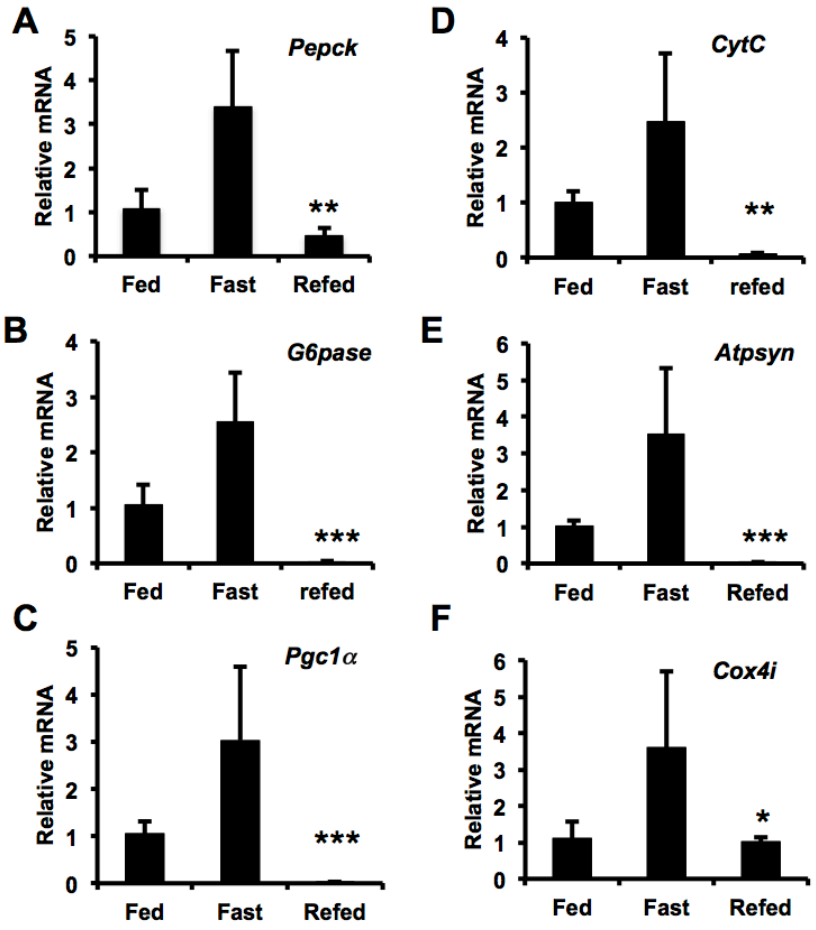
Supplementary Figure 3. Changes in gluconeogenic and OxPhos gene expression following Fast/Fed conditions and 4 hours following refeeding. Mice were fasted overnight and then administered food for four hours. Mice were euthanized, livers removed and RNA isolated RTPCR performed for A) *Pck1*, B) *G6Pase*, C) *Pgc1α*, D) *CytC*, E) *AtpSynF1*, or F) *Cox4i*. N=4 ± SD. * p < 0.05, ** < 0.01, *** p < 0.001.



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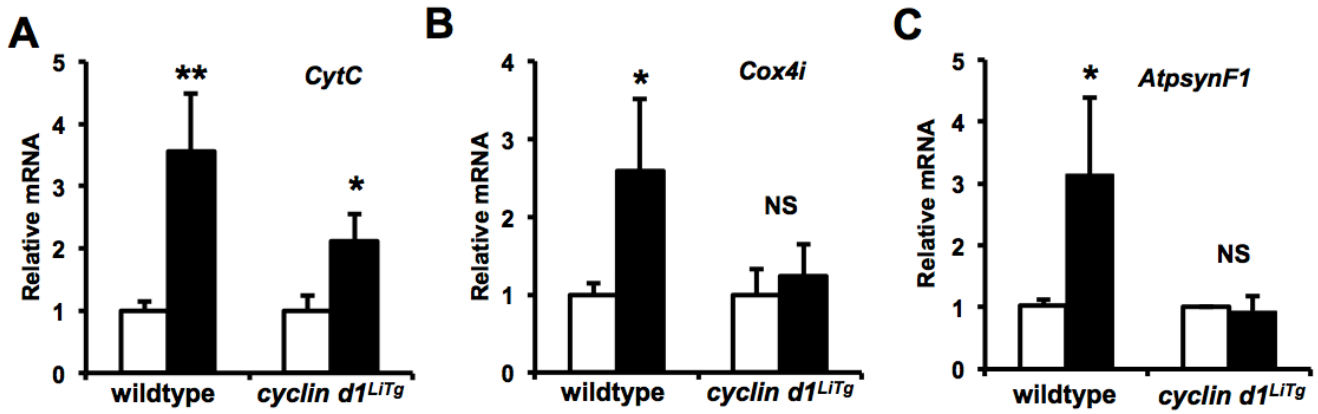
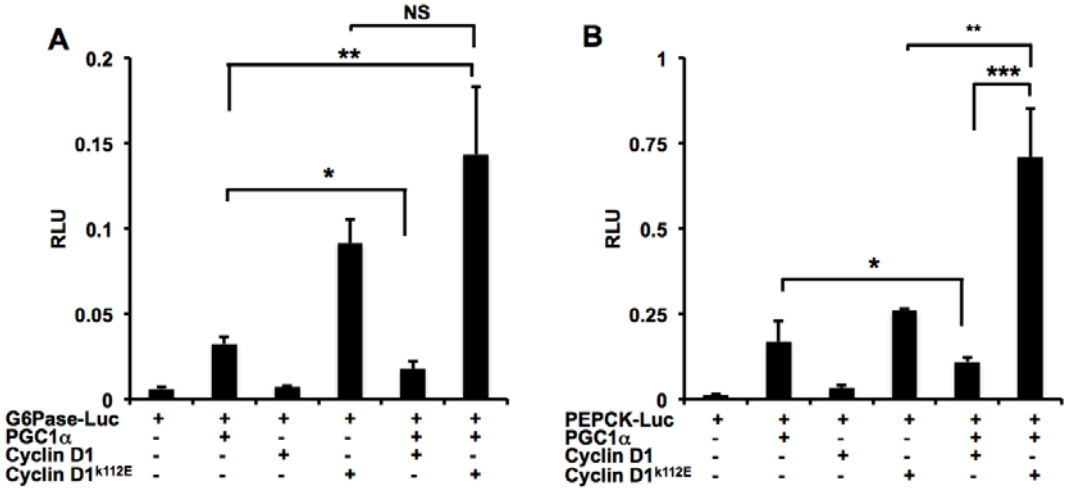
SUPPLEMENTARY DATA

Supplementary Figure 4. Wild-type mice and liver-specific *Cyclin d1*^{LiTG} mice either were fed or fasted overnight. Livers were harvested, RNA was isolated, cDNA was synthesized, and RT-PCR was performed A) *Cyt-C*, B) *cox4i*, and C) *AtpsynF1* RNA from livers of fed and fasted mice. N=4 ± SD. *p<0.05, **p<0.0001. NS, Not significant, p > 0.05.



Supplementary Figure 5. Activation of CDK4 by cyclin D1 appears necessary for repression of PGC1α activity. Cos7 cells were transfected with A) G6Pase promoter luciferase construct or B) PEPCK promoter luciferase construct along with 100 ng HNF4, 250 ng of PGC1α and 250 ng of wild-type or mutant cyclin D1^{K112E} expression constructs as indicated and described in materials and methods. Luciferase activity was measured 24 hours following transfection. N=3 ± SD. * p < 0.05, ** p < 0.005, *** p < 0.0005.



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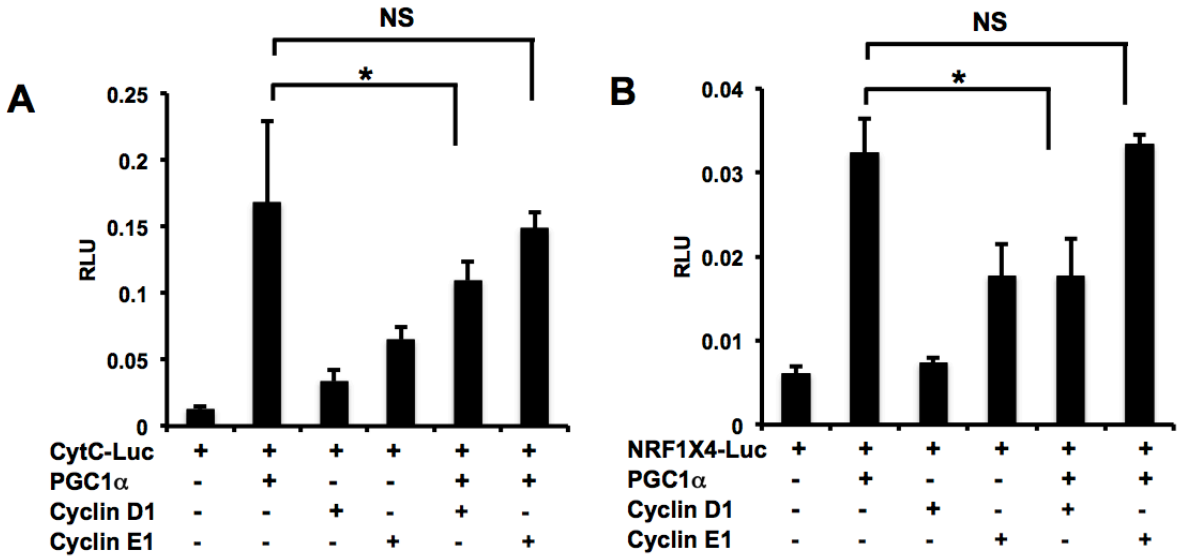
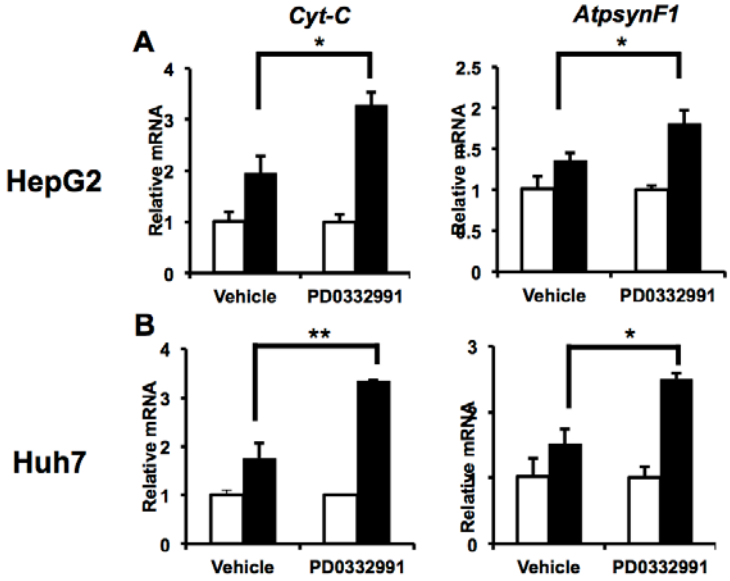
Supplementary Figure 6. Cyclin E1 does not alter the transcriptional activity of PGC1α. Cos7 cells were transfected with A) 50 ng of cytochrome C promoter luciferase construct or B) 100 ng of multimerized NRF1 binding site (NRF1X4) luciferase constructs along with 250 ng of PGC1α and 250 ng of cyclin D1 or cyclin E1 expression constructs as indicated and described in materials and methods. Cells were harvested after 20 hours, and luciferase activity was measured as described in materials and methods. N=3 ± SD. * $p < 0.05$.



Supplementary Figure 7. Pharmacological or genetic loss of CDK4 increases PGC1α induced OxPhos. A) HepG2 and B) Huh7 cells were infected with PGC1α adenovirus or control GFP and then treated with 1 μM PD0332991 for 20 hours. RNA was isolated, cDNA synthesized, and RT-PCR performed for *Cytochrome C* or *ATPsynthase*. N=3 ± SD. * $p < 0.05$, ** < 0.01.



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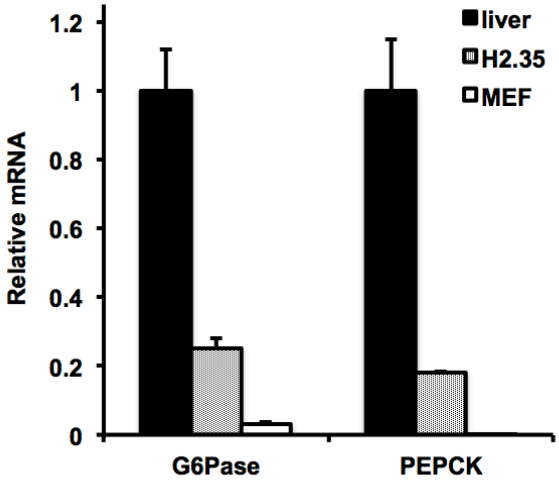
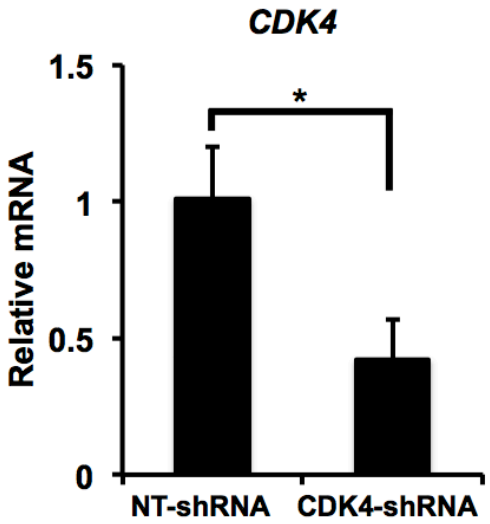
Supplementary Figure 8. MEFs express little *Pepck* or *G6pase.* RNA was extracted from normal mouse liver, MEFs, and murine liver cell line H2.35. RT PCR was performed for Pepck, G6pase and actin as a housekeeping gene. N=3±SD.



Supplementary Figure 9. shRNA against CDK4 was transfected into Huh7 cells for 48 hr. RNA was isolated and RTPCR run for CDK4 to confirm knockdown. N=3±SD. * < 0.05.



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