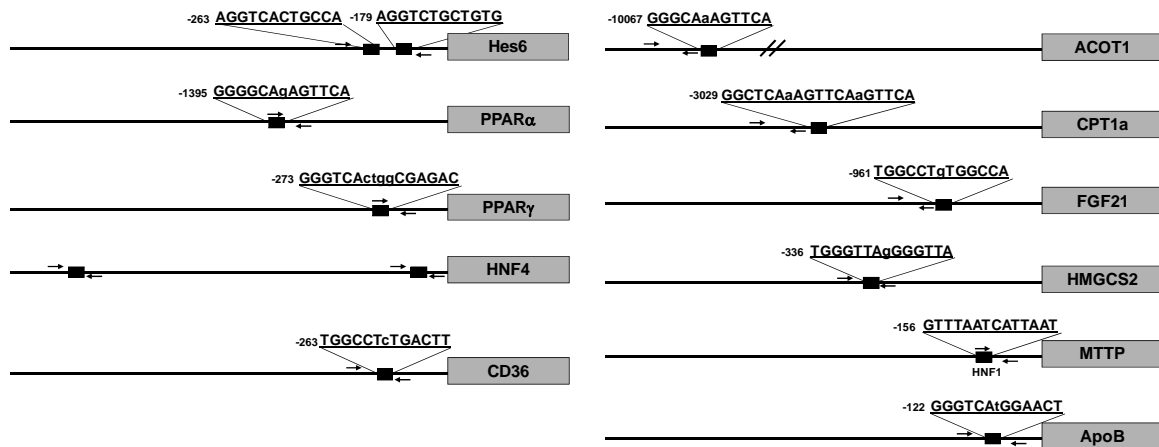


SUPPLEMENTARY INFORMATION

Supplementary Table 1

Positions and Sequences of ChIP primers



1	mHes6	proximal promoter	1 Forward	-203	5' GGA GTC CTG CCC GGC CTA AGT GG 3'
			1 Reverse	-55	5' ATT GGC TGT GCG TGG TCG GAG AG 3'
2	mPPAR α	distal promoter	2 Forward	-1392	5' GGC AGA GTT CAC CAC AGG TAT G 3'
			2 Reverse	-1268	5' AAG GAA ACT TTC AGC GCA CAT CT 3'
3	mPPAR γ	proximal promoter	3 Forward	-270	5' TCA CTG GCG AGA CAA TGT AG 3'
			3 Reverse	-119	5' AAT AAA CAC AGA AAG AAT CAG GC 3'
4	mHNF4 α	proximal promoter	4 Forward	-394	5' ATC TGG GAC GTG ATT GGC TTA G 3'
			4 Reverse	-265	5' AGG ACT GGC ATT GGT TGG AC 3'
5	mHNF4 α	enhancer	5 Forward	-6173	5' GGG AGG GAG GAA GAG GCT ACT G 3'
			5 Reverse	-6021	5' GCC ACT AGC TTG CTC ATT GAC C 3'
6	mCD36	proximal promoter	6 Forward	-402	5' GGA CAG ACC AAT CAG TTC CCT AA 3'
			6 Reverse	-234	5' ATG TTC CCA TCC AAG TAA GTC AG 3'
7	mAcot1	enhancer	7 Forward	-10348	5' ACT GCC CAG GTC ACG CTT CAC 3'
			7 Reverse	-10235	5' CCC ACC CCC AGC AAC CAT T 3'

8	mCPT1	distal promoter			
		8 Forward	-3306	5' TTC ACT GGG TGC TCG GGA AG 3'	
		8 Reverse	-3109	5' TGG CAT TGT CGC AAG GAT AAC A 3'	
9	mFGF21	proximal promoter			
		9 Forward	-1117	5' CTT CCC CTT CAC CGA GCC TA 3'	
		9 Reverse	-1010	5' TGT CCT CCC TGA TGC AAT CCT A 3'	
10	mHMGC2	proximal promoter			
		10 Forward	-463	5' GAC TGA TTT CAA GTT CAA GGC TA 3'	
		10 Reverse	-307	5' GCT CAC CAT CTG TTC CTA ACC 3'	
11	mMTTP	proximal promoter			
		11 Forward	-164	5' CCC ACC TGC GTT TAA TCA TT 3'	
		11 Reverse	-58	5' CGG CGA CAA CAG TGT TTA TCT AT 3'	
12	mApoB	proximal promoter			
		12 Forward	-165	5' ACT ATT AGA AGC TGG ACA TGT G 3'	
		12 Reverse	-40	5' TGG GAC CAT CCA CAG TAA AGC 3'	

Supplementary Table 2

Sequences of RT-PCR primers

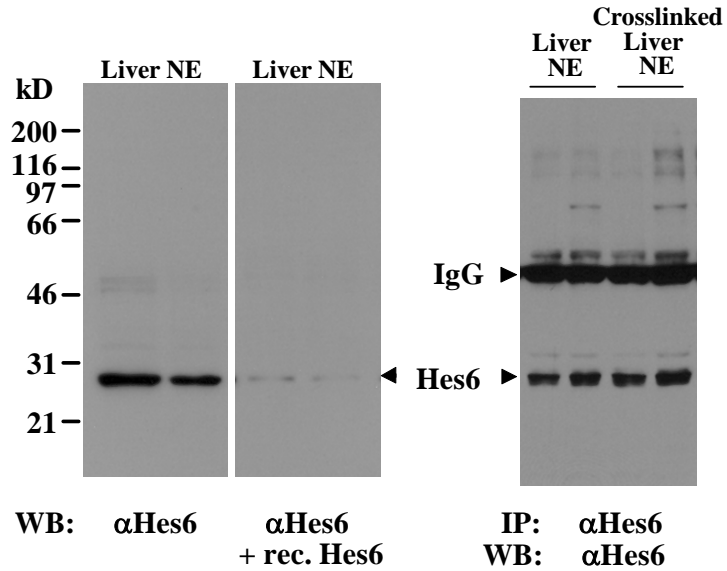
mGAPDH	NM_008084	5' ATG TGT CCG TCG TGG ATC TGA C 3' 5' TGG GAG TTG CTG TTG AAG TCG 3'
mLXR α	NM_013839	5' CCG TAC TTT GAG CAG CGT CCA TT 3' 5' CCA ACA CAA AGG ACA CGG TGA A 3'
mPPAR α	NM_011144	5' CCT TCT ACG CTC CCG ACC CA 3' 5' CCA TGT CCA TAA ATC GGC ACC A 3'
mPPAR γ	NM_U01841	5' CCT GAC GGG TCT CGG TTG AG 3' 5' ACA GAG CTG ATT CCG AAG TTG G 3'
mHes1	NM_008235	5' GAG CGT GTT GGG GAA ATA CC 3' 5' GGG TAG GTC ATG GCG TTG AT 3'
mHes6	NM_019479	5' TTT GGG CAT TCT GAG GAT CTA 3' 5' CGC AAC TGT GTT ACA AAC GA 3'
mHNF4 α	NM_008261	5' GCG GAG GTC AAG CTA CGA G 3' 5' CAA TCT TCT TTG CCC GAA TGT C 3'
mCD36	NM_007643	5' CCA AGC TAT TGC GAC ATG ATT 3'

		5' CCG AAC ACA GCG TAG ATA GAC C 3'
mAcot1	NM_012006	5' GGA GGT TGG GGA AAG GTA CAA A 3' 5' CCA GCC CTT GAA TCA GCA CTA T 3'
mCPT1	NM_013495	5' AAG AAA ACA AAA GGC AAC ATA A 3' 5' TGT CAC ACT TGG GTA CTA GCA 3'
mFGF21	NM_020013	5' GAG CAT GGT AGA GCC TTT ACA 3' 5' CGT AAT AAA TAA GTG GAA ACC CAA 3'
mHMGCS2	NM_008256	5' TCC CAC CAC CAG CAG TAA AG 3' 5' AGT TCT GGA AAG ATC GAG GGT C 3'
mMTTP	NM_008642	5' TAT CTA CAG GCA GGG GAT ATG TC 3' 5' TCT GGC TGA GGT GGG AAT AC 3'
mApoB	XM_137955	5' GGA TTC GAG CAC AGA TGA CC 3' 5' CTT AGA AGC CTT GGG CAC A 3'

Supplementary Table 3

Oligonucleotides used in electrophoretic mobility-shift assays

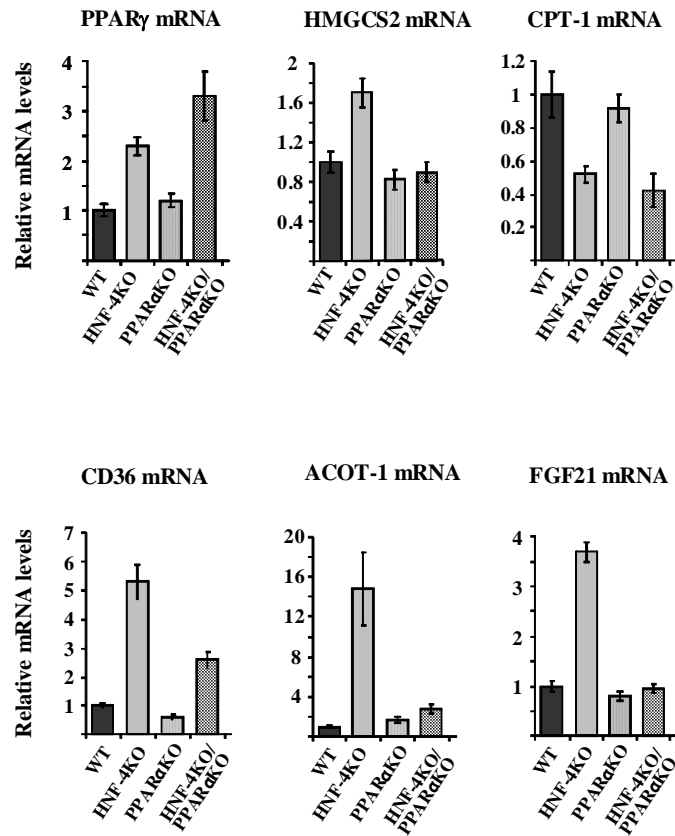
Acot1	Sense (-10073)	5' GGGGAAGTGGGGCAAAGTTCATGGCAAGCT 3'
	Antisense	5' GGGAGCTTGCCATGAACTTTGCCCCAGTTC 3'
Cpt1	Sense (-3035)	5' GGGTACAGGGGCTCAAAGTTCAAGTTCAGTGGGG 3'
	Antisense	5' GGGCCCCACTGAACTTGAACCTTGAGCCCCTGTA 3'



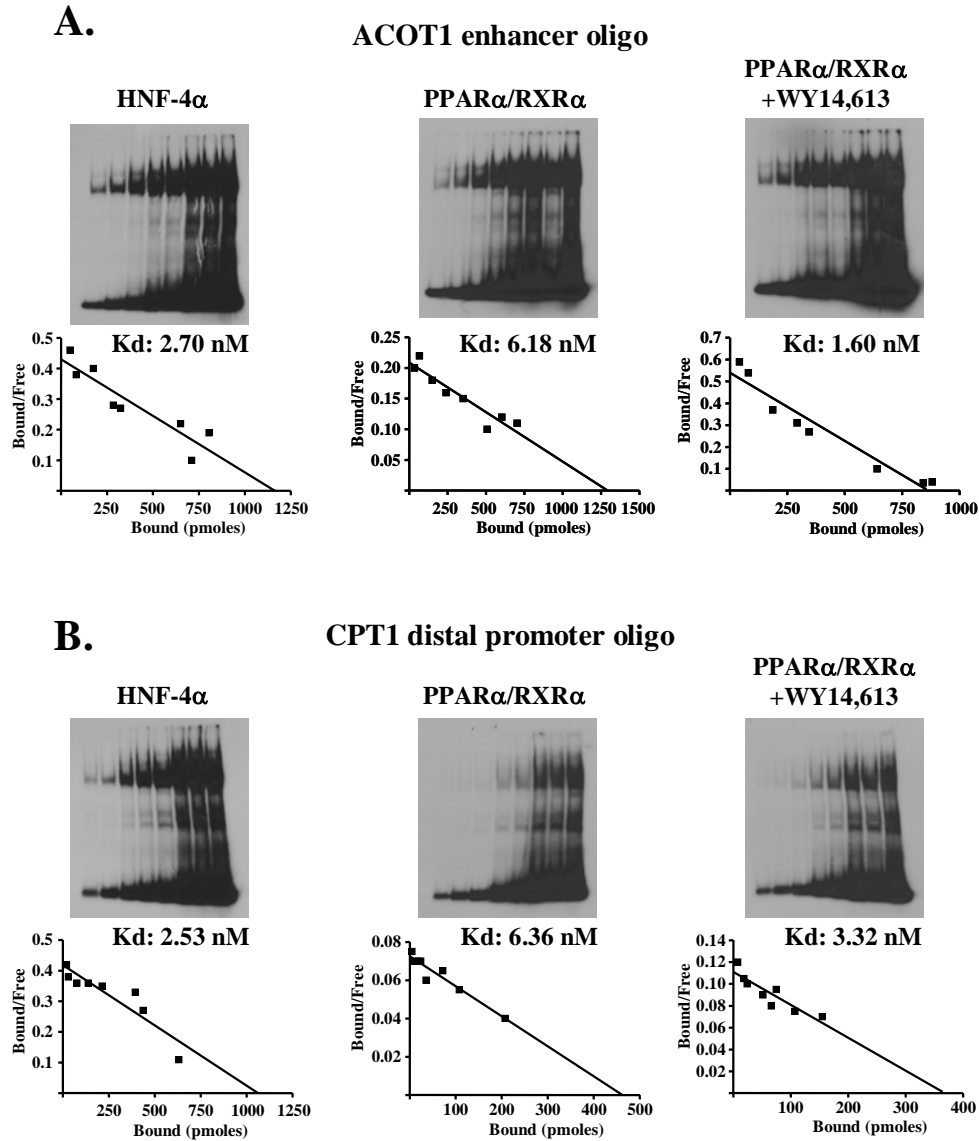
Supplementary Figure 1. Specificity of α Hes6 antibody.

(Left panels) Nuclear extracts ($\sim 40 \mu\text{g}$ protein per lane) from two wild-type mouse livers were analyzed in western blots using α Hes6 antibody (1:2000 dilution) in the absence or presence of 1 μg recombinant Hes6 competitor protein.

(Right panel) Nuclear extracts from livers were prepared from livers by standard procedures or from livers after crosslinking by the procedure used for ChIP. After immunoprecipitation with α Hes6 antibody, Hes6 protein was detected by ECL in western blots performed by the same antibody.



Supplementary Figure 2. Comparative analysis of hepatic mRNA levels of fatty acid metabolism genes in the livers of *HNF4-LiVKO*, *PPAR α -KO* and double *HNF4-LiVKO/PPAR α -KO* mice. Bars represent mean values and standard deviations of mRNA levels relative to wild-type values (n=3 per group).



Supplementary Figure 3. DNA binding affinity measurements of HNF4 α and PPAR α with ACOT1 and CPT1 promoter elements.

The dissociation constant values were obtained from binding reactions containing constant amount of protein extracts from cells transfected with the indicated cDNAs and increasing concentrations of radiolabeled oligonucleotide probes. After electrophoresis bound and free probes were quantitated using STORM phosphoimage analyzer. Linear regression curves were obtained by plotting the amount of bound probe versus bound/free. The Kd values were calculated from the slopes using Graphpad Prism 4 program.