Supplementary tables and figures

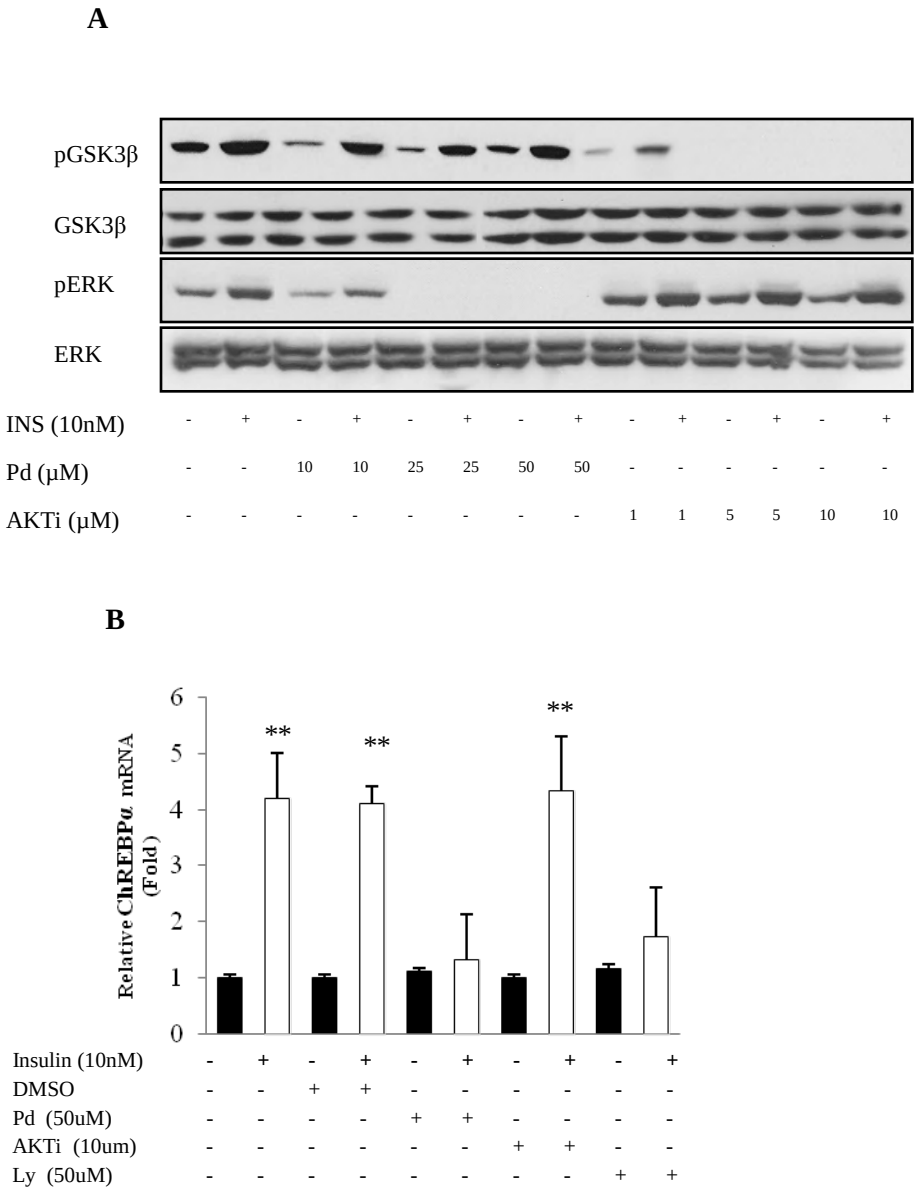
Supplementary Table 1. List of antibodies utilized in the study

Antibody	**Company**	**Catalogue number**
phosphorylated protein kinase B (Akt) (ser473)	Signal way Antibody	21054
Akt	Cell Signaling Technology	9272
phosphorylated glycogen synthase kinase (GSK) 3β (Ser9)	Cell Signaling Technology	9331
GSK3β	Cell Signaling Technology	9315
PAK1	Cell Signaling Technology	2602S
Histone3	Cell Signaling Technology	2650S
IRS1	Cell Signaling Technology	2382L
Phospho-Tyrosine (p-Tyr)	Cell Signaling Technology	9411
GAPDH	Santa Cruz Biotechnology	sc-25778
ChREBP	Santa Cruz Biotechnology	sc-21189
ERK	Santa Cruz Biotechnology	sc-94
p-ERK	Santa Cruz Biotechnology	sc-7383
Oct-1	Santa Cruz Biotechnology	sc-8024
p-PAK1(Thr423)	Santa Cruz Biotechnology	sc-12925
Normal rabbit IgG	Santa Cruz Biotechnology	sc-2027
β-actin	Santa Cruz Biotechnology	Sc-47778

Supplementary Table 2. Nucleotide sequences of primers utilized in the study

Gene name	Forward (5' to 3')	Reverse (5' to 3')
Human		
ChREBPα	GGTCACTTCATGGTGTCGTC	CACATCTGTAGGCCAGGCT
POU (ChREBPα) (for ChIP)	CAGGACTCCAAGGAAAGACG	GTCTGTGTCCGAGTCCGAGT
Intron-I (ChREBP) (for ChIP)	AGGGCATCTAAGGTCCTGGT	CCCCAGCTATCTCTGACTGG
β-actin	TCATGAAGTGTGACGTTGACA	CCTAGAAGCATTTGCGGTG
Mouse		
***ChREBP* (total)**	CCCCCAGCTTTGGCCCCATG	TCGGTCCAGGAGCAGGTGGG
ChREBPα	CGACACTCACCCACCTCTTC	TTGTTCAGCCGGATCTTGTC
ChREBPβ	TCTGCAGATCGCGTGGAG	CTTGTCCCGGCATAGCAAC
Srebf1/SREBP-1c	TAGAGCATATCCCCCAGGTG	GGTACGGGCCACAAGAAGTA
Acaca/Acc1	CACTCCTTAGAGAGGGGTCA	TAACTTCCCAGCAGACGGTG
Fas/Fasn	AGAAGTGCAGCAAGTGTCCA	GGTCGGATGAGGGCAATCTGG
Scd1	TGGAGCCACAGAACTTACAAG	GTTTTCCGCCCTTCTCTTTG
Me1	AGGCTATTGTGGTAACTGATGG	CAGGAAGGCGTCATACTCAG
Lpk/Pklr	GAGTCGGAGGTGGAAATTGT	CCGCACCACTAAGGAGATGA
POU (ChREBPα) (for ChIP)	CAGAAAGAAAGGCGAAGCAC	GCCACTATTGTCGCCAACTC
Intron-I (ChREBP) (for ChIP)	AAGTTCAGGCTGGCATTGAG	CCAACCTTGACGTAGCGTTC
GAPDH	GACCACAGTCCATGCCATCA	TGAAGTCGCAGGAGACAACC

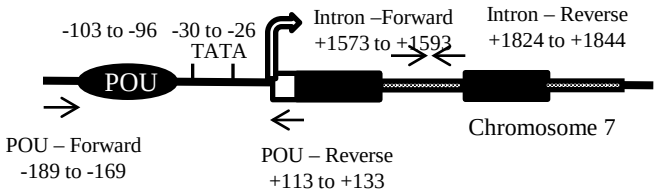
Figure. S1



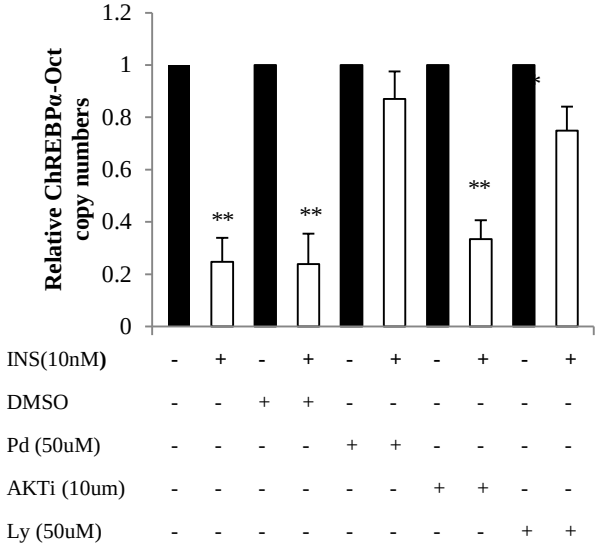
Supplementary Figure S1. A) Western blot shows the anticipated repressive effect of chemical inhibitors on the phosphorylation of GSK-3β (by Akti) and ERK-1 (by PD98059, Pd) in human HepG2 cell line. **B)** qRT-PCR analyses shows that insulin stimulated *ChREBP* mRNA expression can be blocked by the MEK inhibitor PD98059 but not by the Akt inhibitor Akti in HepG2 cells.

Figure. S2

A

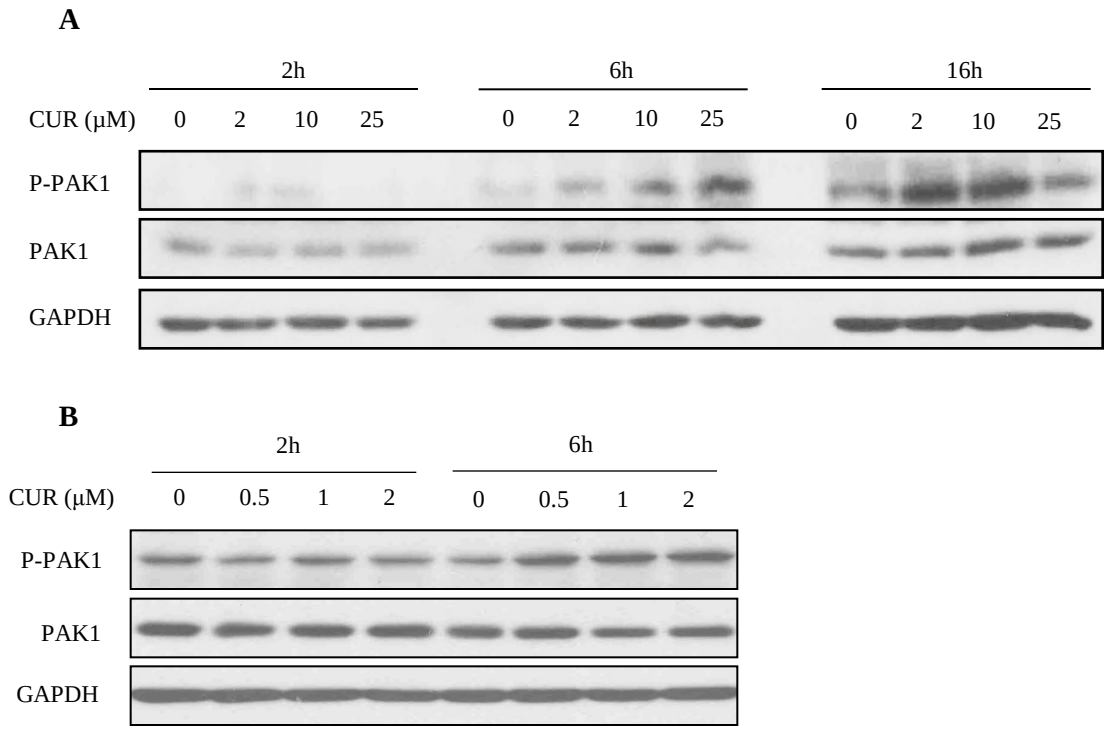


B



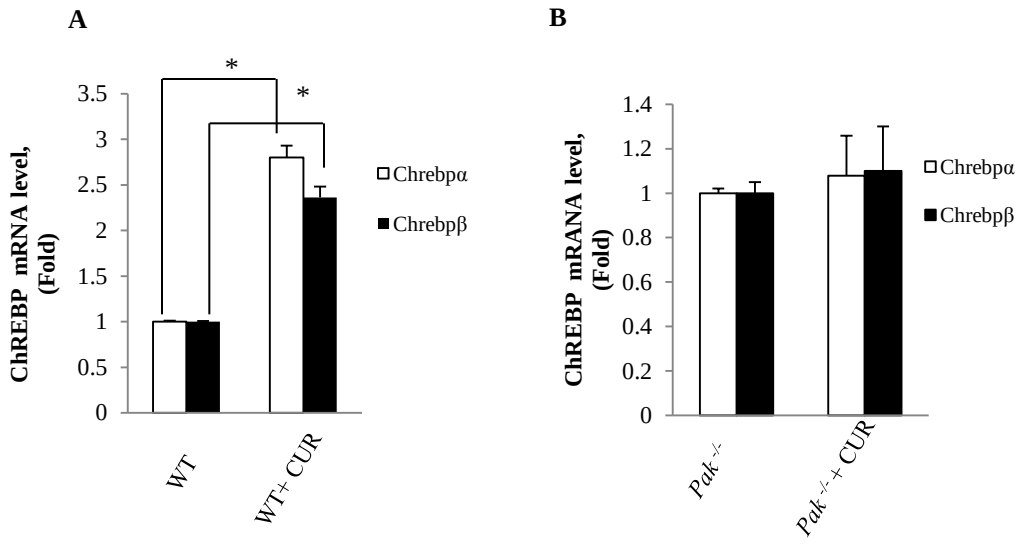
Supplementary Figure S2. **A)** Overall organization of human *ChREBPα* gene proximal 5' flanking region and the positions of primers utilized for qChIP. **B)** qChIP shows that insulin attenuated Oct-1 binding to ChREBP promoter in the HepG2 cell line can be blocked by MEK-ERK inhibition, but not by Akt inhibition. Values are presented as arbitrary copy number, with the untreated sample defined as 1.

Figure. S3



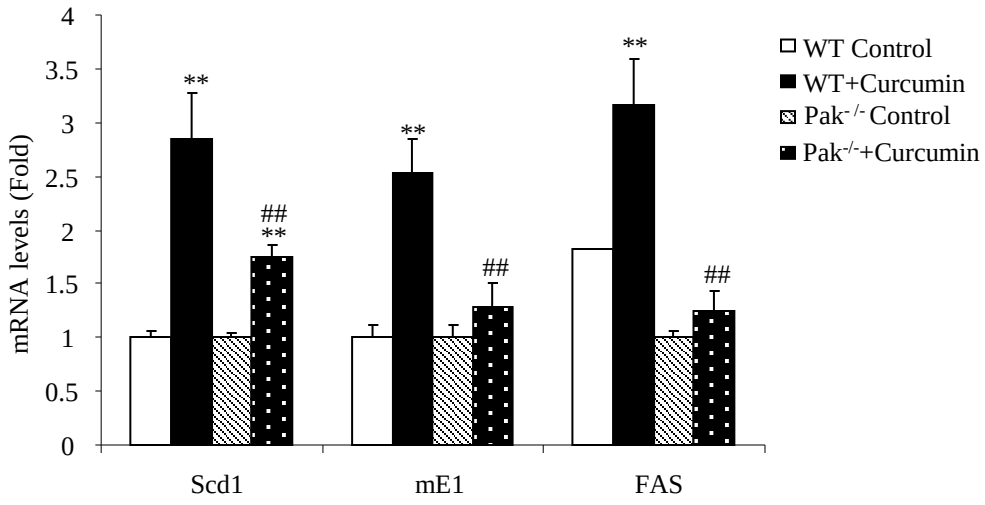
Supplementary Figure S3. Western blot shows the effect of curcumin treatment (with indicated dosages and time intervals) on Pak1 Thr 423 phosphorylation in the HepG2 cell line.

Figure. S4



Supplementary Figure S4. Curcumin stimulated *ChREBPα* and *ChREBPβ* mRNA expression was not observed in *Pak1*$^{-/-}$ hepatocytes. Hepatocytes were isolated from 12 wk old control littermates (A) and *Pak1*$^{-/-}$ mice (B). Cells were treated with 1.0 μM curcumin for 4 h before harvested for qRT-PCR. Values are presented as arbitrary copy number, with the untreated sample defined as 1. n = or > 3.

Figure. S5



Supplementary Figure S5. *Pak1*$^{-/-}$ hepatocytes show attenuated response to curcumin treatment on the three genes that encode lipogenic enzymes. Hepatocytes were isolated from 12 wk old control littermates (WT) and *Pak1*$^{-/-}$ mice. Cells were treated with 1.0 μM curcumin for 4 h before harvested for qRT-PCR analyses. Values are presented as arbitrary copy number, with the untreated sample (control vehicle) defined as 1. n = 3. **, WT or *Pak1*$^{-/-}$ control vs. curcumin treatment. ##, WT curcumin vs. *Pak1*$^{-/-}$ + curcumin.