Supplementary Information

for

Protein phosphatase 4 (PP4) functions as a critical regulator in tumor necrosis factor (TNF)-α-induced hepatic insulin resistance

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Supplementary Fig. S1

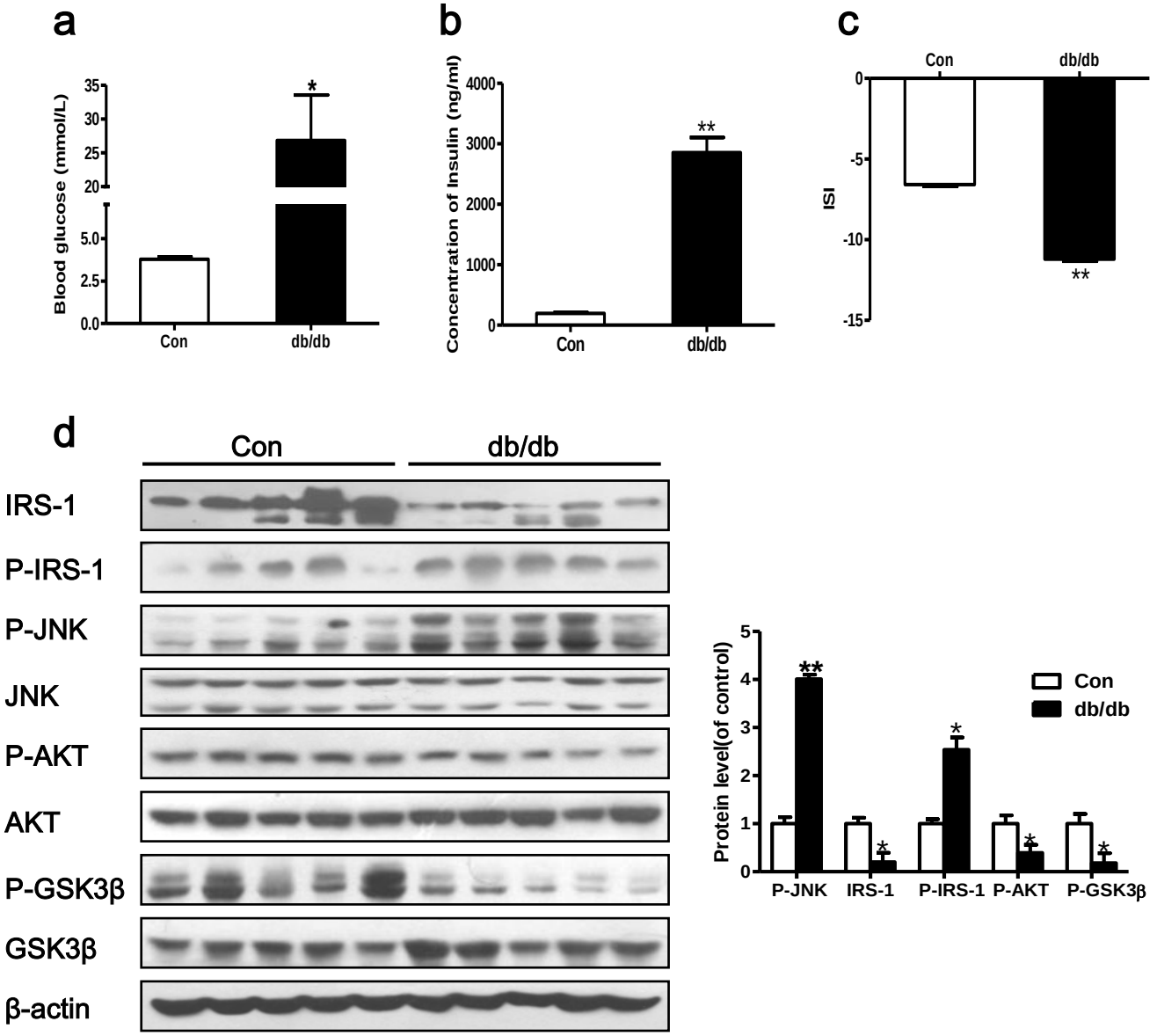

Figure S1. db/db mice exhibited obvious features of insulin resistance. The levels of blood glucose (**a**) and insulin concentration (**b**) were increased, whereas the insulin sensitive index (ISI) was decreased (**c**). The insulin signaling pathway was disordered in the livers of db/db mice, assessed by increased phosphorylation of IRS-1 (ser 307) and JNK, reduced expression of IRS-1 and AKT/GSK3β phosphorylation (**d**). Data represent the means ± S.D., (n=10 mice *in vivo*). *P<0.05 and **P<0.01 versus control. Con ─ control.

Supplementary Fig. S2

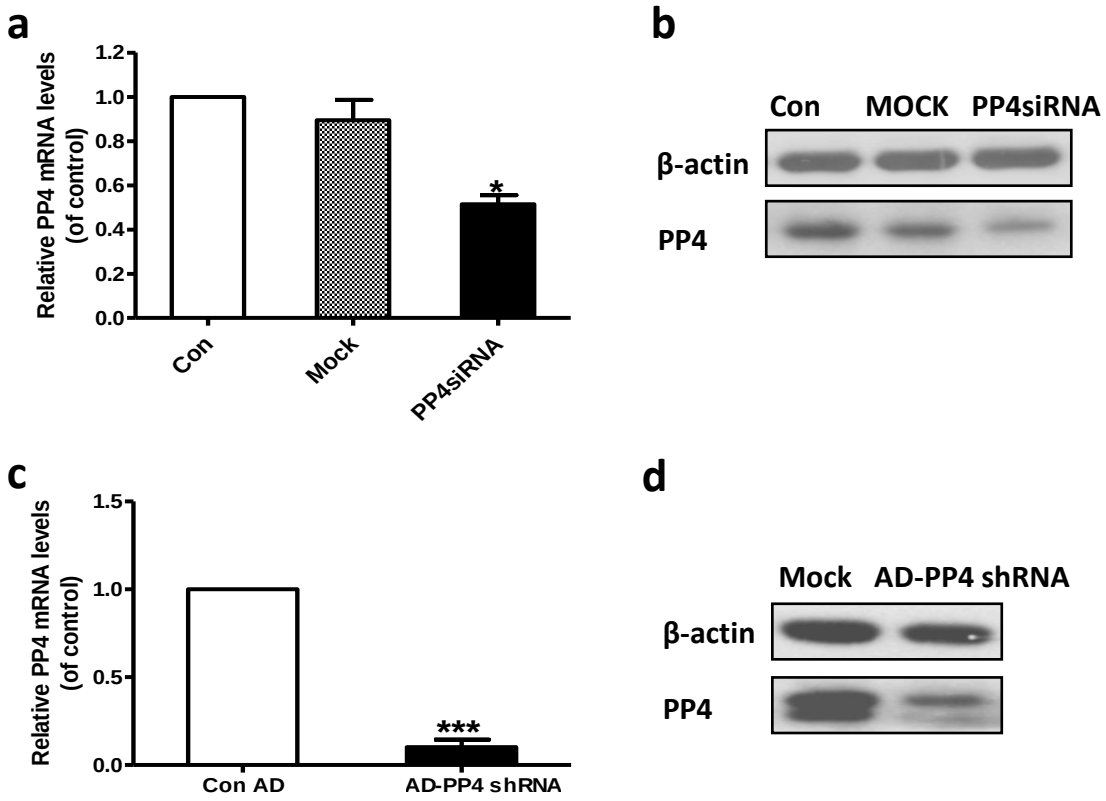

Figure S2. Expression of PP4 was decreased by PP4 siRNA and AD-PP4 shRNA. In order to knock down the expression of PP4, HepG2 cells and mouse primary hepatocytes were transfected with PP4siRNA or AD-PP4 shRNA, respectively. By applying quantitative real-time PCR and western blot analysis, we detected both PP4 siRNA (**a, b**) and AD-PP4 shRNA (**c, d**) could reduce the expression of PP4. Data represent the means ± S.D., (n=3 independent experiments in vitro). *P<0.05 and ***P<0.001 versus control. Con ─ control; Con AD ─ control AD.

Supplementary Table S1. Oligonucleotides of PP4siRNA

Gene Name	Sequences (5’〉3’)
PP4C-728s	GGUUACAAGUGGCACUUCATT
PP4C-728as	UGAAGUGCCACUUGUAACCTT

Supplementary Table S2. List of oligonucleotide primers for quantitative real-time PCR

Gene Name	Forward primer (F) Reverse primer (R)	Primer' Sequences (5'〉3')
18s rRNA	*F*	GTAACCCGTTGAACCCCATT
18s rRNA	*R*	CCATCCAATCGGTAGTAGCG
Human PP4	*F*	CTGACCCAGAAGACACCACA
Human PP4	*R*	TGAGCACCGTCTCATTGAAG
Human G6Pase	*F*	TACGTCCTCTTCCCCATCTG
Human G6Pase	*R*	CCTGGTCCAGTCTCACAGGT
Human PEPCK	*F*	GAGAGAACTCCAGGGTGCTG
Human PEPCK	*R*	CCTTGGAGATGCTGAAAAGC
Human PGC-1α	*F*	CACCAGCCAACACTCAGCTA
Human PGC-1α	*R*	ACGTCTTTGTGGCTTTTGCT
Mouse PP4	*F*	CAATCATGAGAGTCGCCAGA
Mouse PP4	*R*	GATGGAAGGGGAAAGACCTC
Mouse G6pase	*F*	TCTGTCCCGGATCTACCTTG
Mouse G6pase	*R*	GTAGAATCCAAGCGCGAAAC
Mouse Pepck	*F*	TCTGAGATCTCTGATCCAGACC
Mouse Pepck	*R*	GAAGTCCAGACCGTTATGCAGC
Mouse Pgc-1α	*F*	GCCTATGAGCACGAAAGGC
Mouse Pgc-1α	*R*	TCACACGGCGCTCTTCAATT
Mouse Tnf-α	*F*	CACAGAAAGCATGATCCGCG
Mouse Tnf-α	*R*	ACTGATGAGAGGGAGGCCAT