

Fig.S1 Expression levels of LRP6 in $LRP6^{+/-}$ mice and wildtype littermates (WT). Relative LRP6 mRNA expression level by qRT-PCR in the brown adipose tissue and liver of $LRP6^{+/-}$ and wild-type (WT) mice (n = 8, mean \pm SEM, ****P < 0.001**) (A). LRP6 protein levels in the liver and brown adipose tissues of the $LRP6^{+/-}$ and WT mice (n = 8, data are mean \pm SEM by densitometry, **p < 0.01**) (B).

Fig.2 Skeletal muscle insulin signaling in $LRP6^{+/-}$ mice and wildtype littermates (WT).

Fig.S3 Growth curve and body fat mass of $LRP6^{+/-}$ mice on chow diet. Growth curve of 8 week old male $LRP6^{+/-}$ (filled circles) and WT mice (unfilled circles) on a chow diet. Mice were weighed once every 2 weeks at the same daytime for 16 weeks (data are mean \pm SEM, ***P < 0.05**) (A). Comparison of percentage total body fat in $LRP6^{+/-}$ and WT mice on chow diet by Dual Energy X-ray Absorptiometry (DEXA) scanning (n = 12 mice per group, differences were not statistically significant)

Fig.S4 Serum adipokines in $LRP6^{+/-}$ mice and wildtype littermates (WT). Serum adiponectin levels were only modestly higher in $LRP6^{+/-}$ compared to WT mice (A). Serum leptin levels were not significantly different between $LRP6^{+/-}$ and WT mice on high fat diet (B) (mean \pm SEM, **P > 0.5**).

Fig. S5 UCP1 mRNA(A) and protein levels (B) of the white (abdominal) adipose tissue in $LRP6^{+/-}$ compared to WT mice(*P < 0.001).

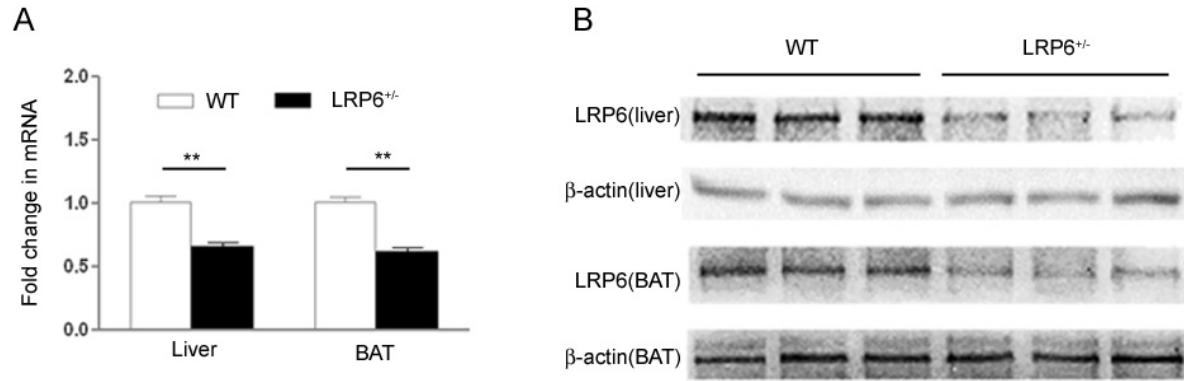


Fig.S1 Expression levels of LRP6 in *LRP6*^{-/-} mice and wildtype littermates (WT).

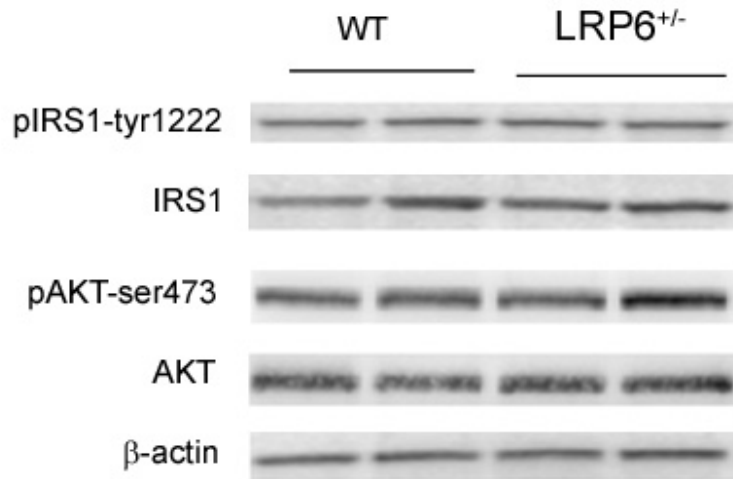


Fig.2 Skeletal muscle insulin signaling in *LRP6*^{+/-} mice and wildtype littermates (WT).

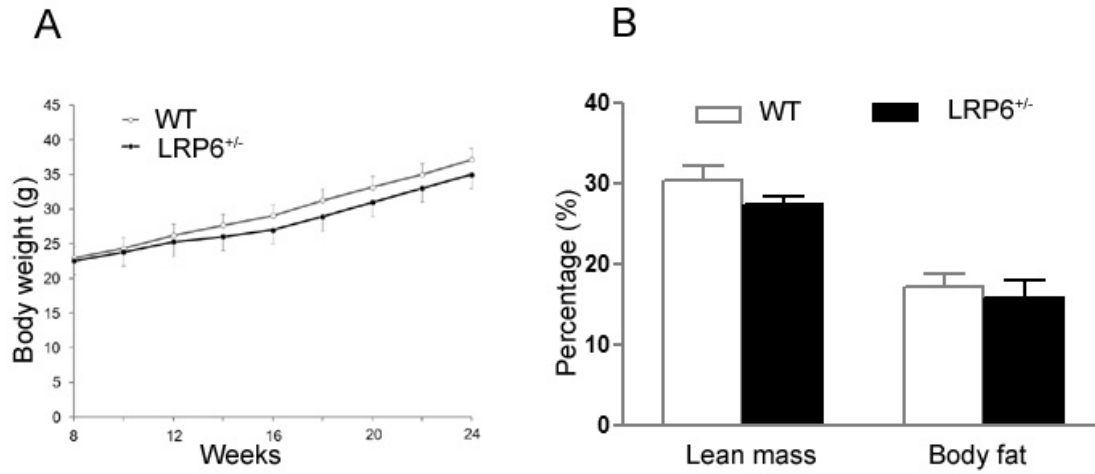


Fig.S3 Growth curve and body fat mass of *LRP6*^{+/-} mice on chow diet.

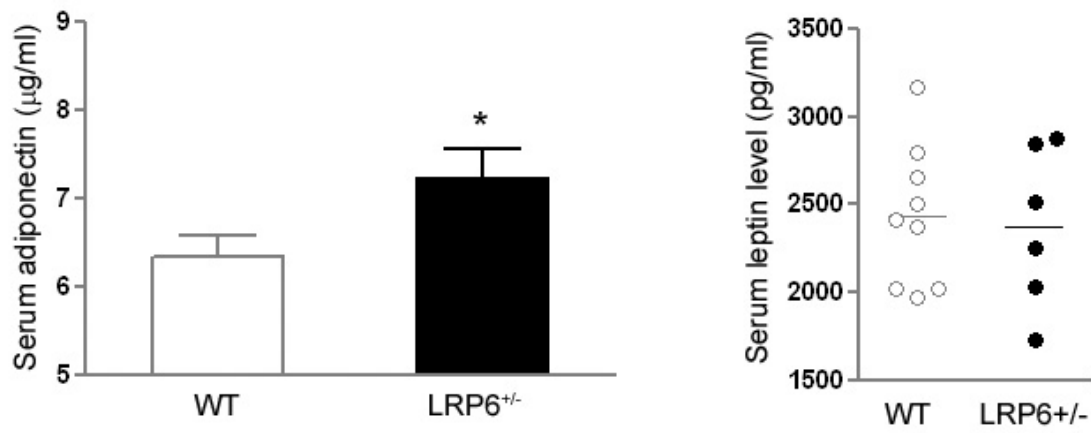


Fig.S4 Serum adipokines in *LRP6*^{+/-} mice and wildtype littermates (WT).

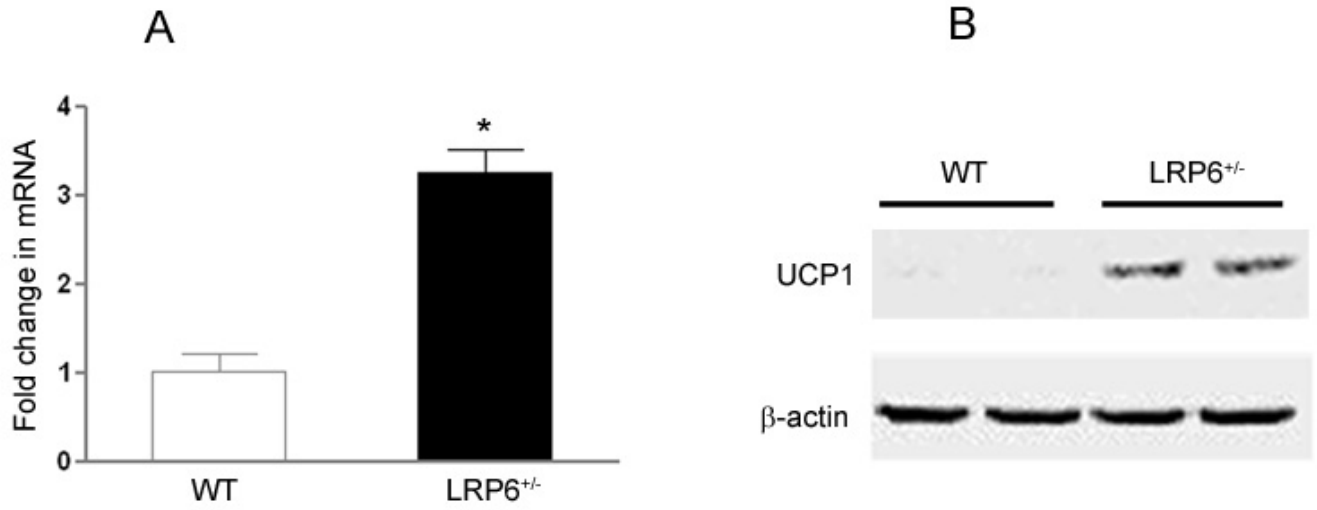


Fig. S5 UCP1 mRNA(A) and protein levels (B) of the white (abdominal) adipose tissue in *LRP6*^{+/-} compared to WT mice(P* < 0.001).**

Chow Diet				
N=8	LDL	CHOL	HDL	TG
WT	5.23±0.77	81.95±8.66	42.63±5.29	54.88±10.99
LRP6+/-	5.67±0.47	78.34±13.20	36.32±5.69	63.4±16.86
p	0.21	0.57	0.10	0.43

HFD				
N=8	LDL	CHOL	HDL	TG
WT	5.94±0.92	110.05±12.49	49.44±6.62	62.97±11.38
LRP6+/-	5.36±0.87	103.73±17.84	47.30±10.26	62.1±15.31
p	0.27	0.47	0.66	0.91

Table S1- Lipid profiles of LRP6 +/- mice on chow diet (top) and high fat diet (HFD, bottom) Compared to wildtype littermates

Table S2-Relative mRNA expression of genes differentially regulated in LRP6^{+/-} mice vs. wildtype littermates from Affymetrix GeneChip microarray analysis of the liver tissue

Genes	p value	Fold change
Lrtm1	0.01	3.9
Socs2	0.01	3.7
Onecut1	0.01	3.5
Prlr	0.05	2.5
Moxd1	0.02	2.4
Cyp7a1	0.00	2.2
Rgs1	0.02	2.2
Gm13487	0.02	2.2
St6galnac3	0.02	2.1
Idi1	0.05	2.1
Agxt2l1	0.04	2.1
Igk-V1	0.01	2.1
Gm10767	0.03	2.0
Gas5	0.03	2.0
Lepr	0.04	1.9
Rnu3a	0.04	1.9
Sqle	0.02	1.9
Zfp292	0.00	1.9
Cib3	0.02	1.9
Olf810	0.02	-1.9
Adam11	0.05	-2.0
Fam131c	0.02	-2.2
Hyi	0.00	-2.2
Prg4	0.02	-2.3
Saa3	0.00	-4.6
Bcl6	0.03	-4.8
Orm2	0.01	-4.9
Saa2	0.00	-8.9