**Supplementary information**

**Table 1S** Primer sets used for RT-PCR

| | *Forward(5'-3')* | *Reverse(5'-3')* |
|---|---|---|
| *Osr1* | *CCATCCCTGCAGCTTACCAA* | *GCATGAAGAGCGCTGAAACC* |
| *Osr1_human* | *CGTTCTCAGCTGCTCCTGGTT* | *GTTTTGCTGCCCATTTCGGTA* |
| *Chrebp* | *CCAGCAGGGAAGGGGATTTC* | *AGAGCTGTTCGCACCATCG* |
| *Scd-1* | *AACACCCCGATAGCAATATCCA* | *AGAGAACTGGAGACGGGAGT* |
| *Agpat1* | *CTGGTTCGTTCGGTCCTTCA* | *CCATGAGACCCATCATGTCCA* |
| *Tgf-β* | *TCGCTTTGTACAACAGCACC* | *ACTGCTTCCCGAATGTCTGA* |
| *Fn1* | *TGCTCGTGAATCCTCTTGAACA* | *AACCTGTTTCCAATGGGCCT* |
| *Il-β* | *AAATACCTGTGGCCTTGGGC* | *CTTGGGATCCACACTCTCCAG* |
| *Il-6* | *CCAGAGATACAAAGAAATGATGG* | *ACTCCAGAAGACCAGAGGAAA* |
| *Tnf-α* | *AGCCGATGGGTTGTACCT-TG* | *ATAGCAAATCGGCTGACG-GT* |
| *Ccl-2* | *AGCACCAGCCAACTCTCACT* | *CGTTAACTGCATCTGGCTGA* |
| *Il-8* | *ATGCCTCTCCATTTCCTGCT* | *CATGGGGAAAGAGGCTCTGA* |
| *Il-10* | *TGAATTCCCTGGGTGAGAAG* | *TCACTCTTCACCTGCTCCACT* |
| *Bcl-2* | *GTCGCTACCGTCGTGACTTC* | *CAGACATGCACCTACCCAGC* |
| *Casp3* | *TGGTGATGAAGGGGTCATTTATG* | *TTCGGCTTTCCAGTCAGACTC* |
| *Bid* | *GCCGAGCACATCACAGACC* | *TGGCAATGTTGTGGATGATTTCT* |
| *Trp53* | *CTCTCCCCCGCAAAAGAAAAA* | *CGGAACATCTCGAAGCGTTTA* |
| *Casp8* | *TGCTTGGACTACATCCCACAC* | *TGCAGTCTAGGAAGTTGACCA* |
| *Casp9* | *TCCTGGTACATCGAGACCTTG* | *AAGTCCCTTTCGCAGAAACAG* |
| *Bcl-2_human* | *CTGGTGGGAGCTTGCATCAC* | *ACAGCCTGCAGCTTTGTTTC* |
| *Bid_human* | *ACTGGTGTTTGGCTTCCTCC* | *ATTCTTCCCAAGCGGGAGTG* |
| *Casp8_human* | *CAGCAAAGGGGAGGAGTT* | *CTTCAAAGGTCGTGGTCAAA* |
| *Atm* | *GATCTGCTCATTTGCTGCCG* | *GTGTGGTGGCTGATACATTTGAT* |

| | | |
|---|---|---|
| *Cdk2* | *CCTGCTTATCAATGCAGAGGG* | *TGCGGGTCACCATTTCAGC* |
| *Cdk4* | *ATGGCTGCCACTCGATATGAA* | *TCCTCCATTAGGAACTCTCACAC* |
| *Cdk6* | *GGCGTACCCACAGAAACCATA* | *AGGTAAGGGCCATCTGAAAACT* |
| *Chk1* | *GTTAAGCCACGAGAATGTAGTGA* | *GATACTGGATATGGCCTTCCCT* |
| *Chk2* | *TGACAGTGCTTCCTGTTCACA* | *GAGCTGGACGAACCCTGATA* |
| *Pai* | *TTCAGCCCTTGCTTGCCTC* | *ACACTTTTACTCCGAAGTCGGT* |
| *Pten* | *TTTGCTAGTGAGTGGAATCCTCT* | *TGTGACAAAAGTGACACAGATCA* |
| *Cip1* | *CCTGGTGATGTCCGACCTG* | *CCATGAGCGCATCGCAATC* |
| *Cycb1* | *AAGGTGCCTGTGTGTGAACC* | *GTCAGCCCCATCATCTGCG* |
| *Cycd2* | *GAGTGGGAACTGGTAGTGTTG* | *CGCACAGAGCGATGAAGGT* |

**Figure 1S.**

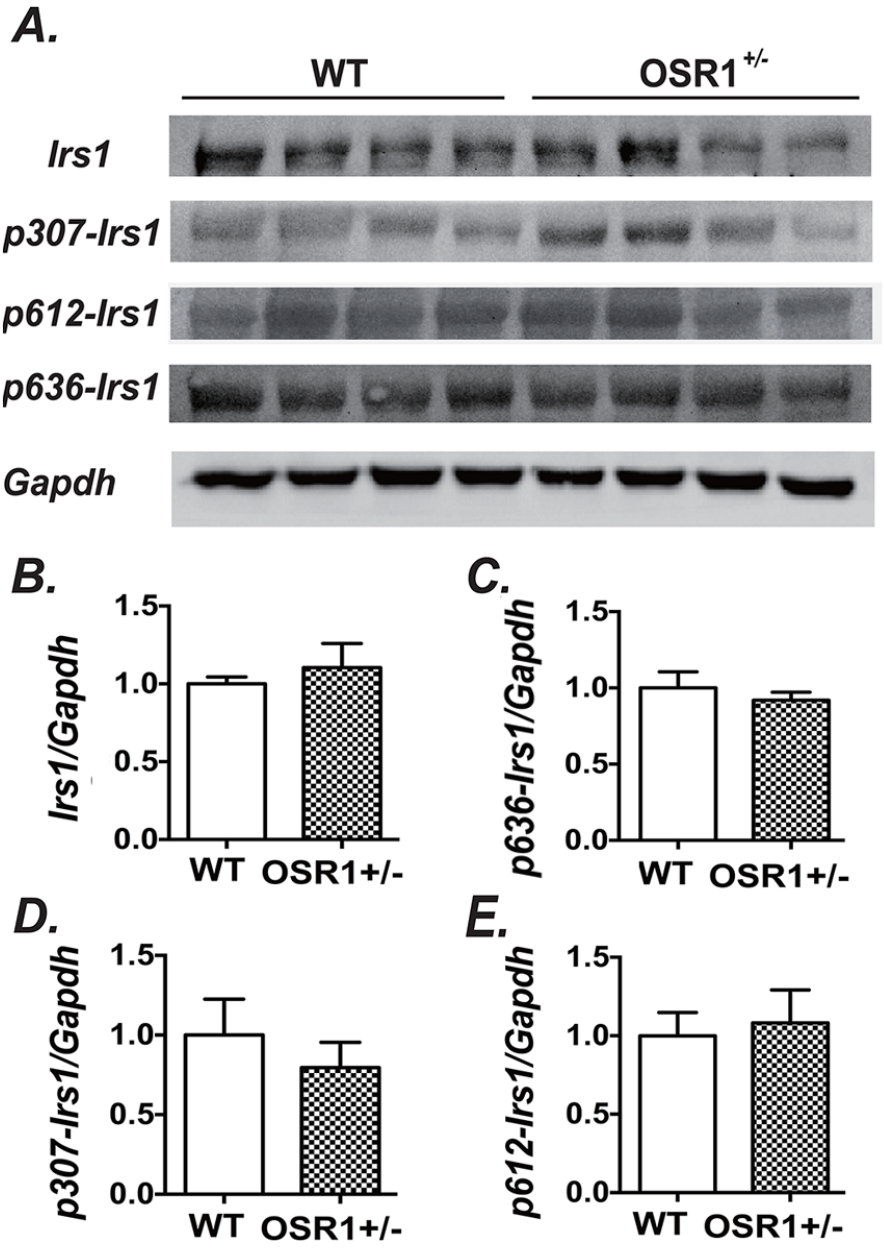


**Figure 1S.** By protein blotting technique, the insulin signaling genes of *Irs-1* and the phosphorylation of *Irs1* at 307, 612 and 636 were all found to be similar between liver tissues of *Osr1*$^{+/-}$ and wildtype mice.

Data of figures 1S A-E is presented as Mean ± SE, n=4.

**Figure 2S.**

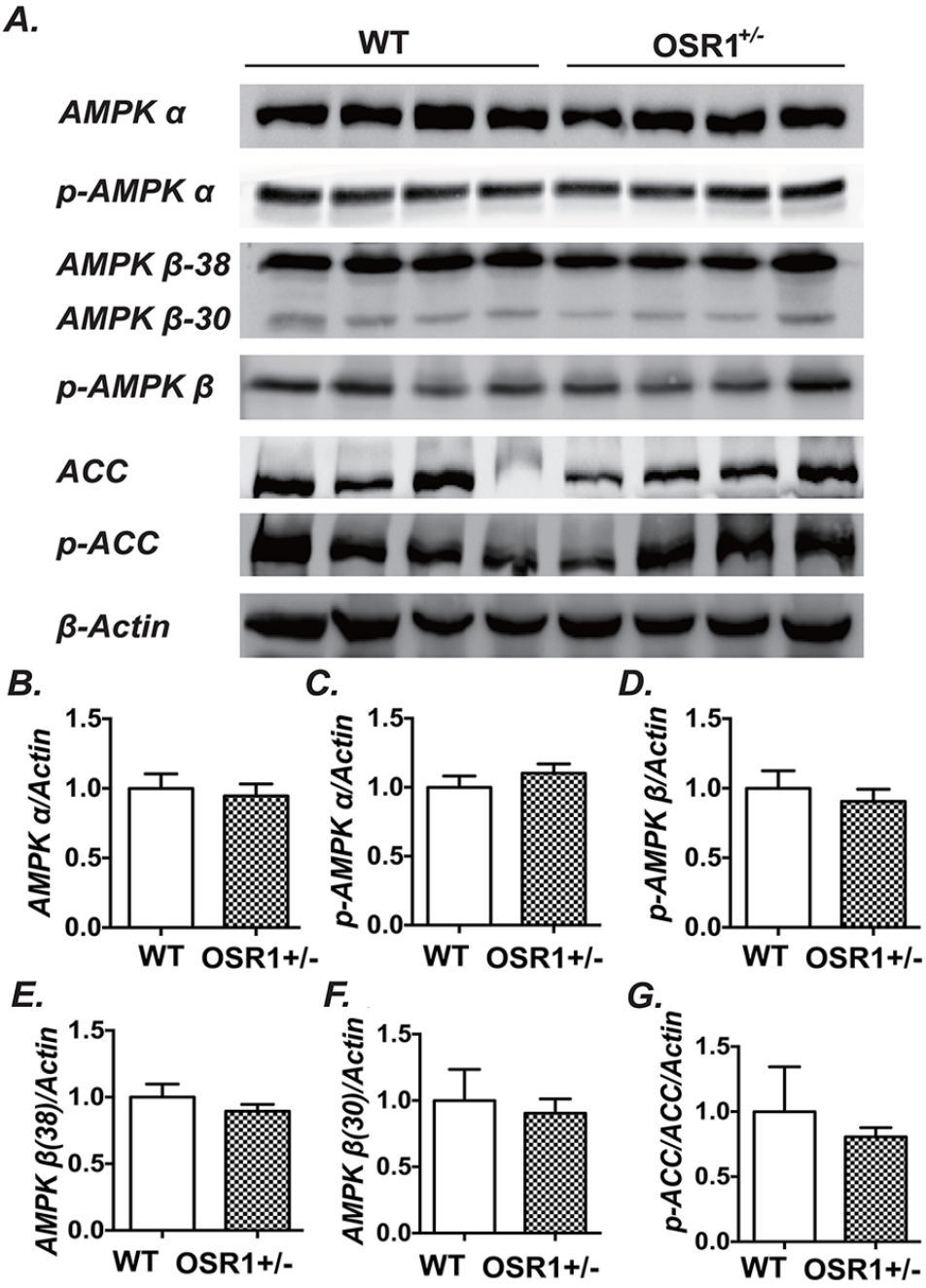


**Figure 2S.** By protein blotting technique, the genes involved in cellular energy homeostasis, such as *AMPK-α, -β, Acc* and their phosphorylated forms, displayed similar expression levels between *Osr1*$^{+/-}$ and wildtype livers.

Data of figures 2S A-G is presented as Mean ± SE, n=4.