

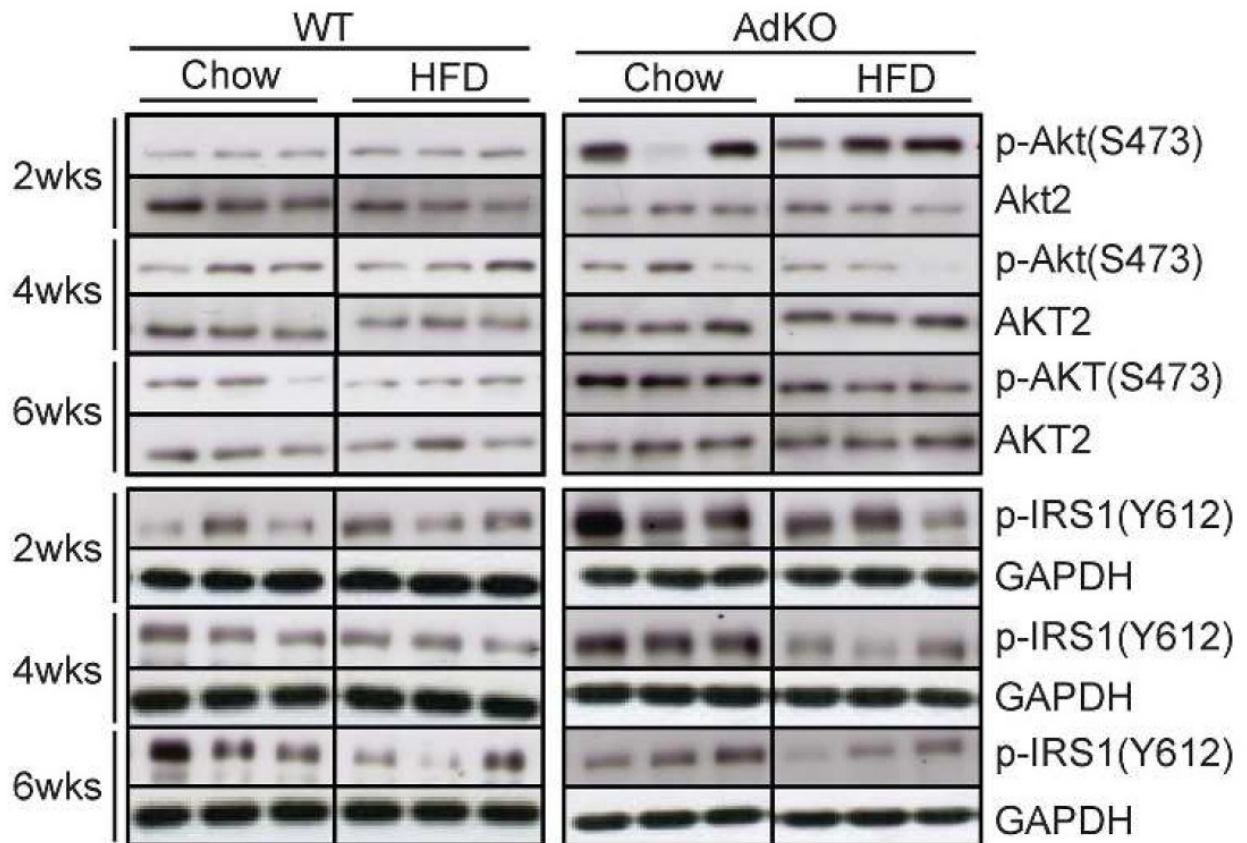
SUPPLEMENTARY DATA

**Supplementary Table 1.** The sequences of the forward and reverse primers used to analyze expression of autophagy related genes are listed from 5'-3' and are as follows.

| Gene           | Forward (5' > 3')    | Reverse (5' > 3')     |
|----------------|----------------------|-----------------------|
| Beclin1        | ATGTGGAAAAGAACCGCAAG | TTGATTGTGCCAAACTGTCC  |
| ATG12          | TGACACACTGGAGGATGTGC | TTGGGAGATGGGTAAGTTGG  |
| ULK1           | AGCACACGGAAACCCTACAC | AGCTCGAATCTGGTCAATGG  |
| LC3B           | AGCCACACCCTTTCCTCAG  | GTCTGGAGCATTGGACTTGC  |
| ATG7           | AGGCACCCAAAGACATCAAG | CGAAGGTCAGGAGCAGAAAC  |
| Lamp2          | AGACCAAACCTCCACCACTG | GAGCACTTTGAGGTTGACAGC |
| ULK2           | AGGAGCCTGTGGTGTTATGC | CACACATACTCGGACTTG    |
| ATG4B          | GTGCTTTGAGAACCCAGACC | GCCTTCTGATGAGCGACTTC  |
| Bnip3          | TGGGGATCTACATTGGAAGG | CAGGAACACCGCATTACAG   |
| ATG5           | TAGAGCCAATGCTGGAAACC | TGTTGCCTCCACTGAACTTG  |
| $\beta$ -actin | AGCCATGTACCTAGCCATCC | TTTGATGTCACGCACGATTT  |

SUPPLEMENTARY DATA

**Supplementary Figure 1.** Representative Western blots for phosphoAkt (S473) and phosphoIRS (Y612) in WT and AdKO mice 2,4,6 weeks after chow or HFD. Quantitative analysis of these samples is shown in figure 1.



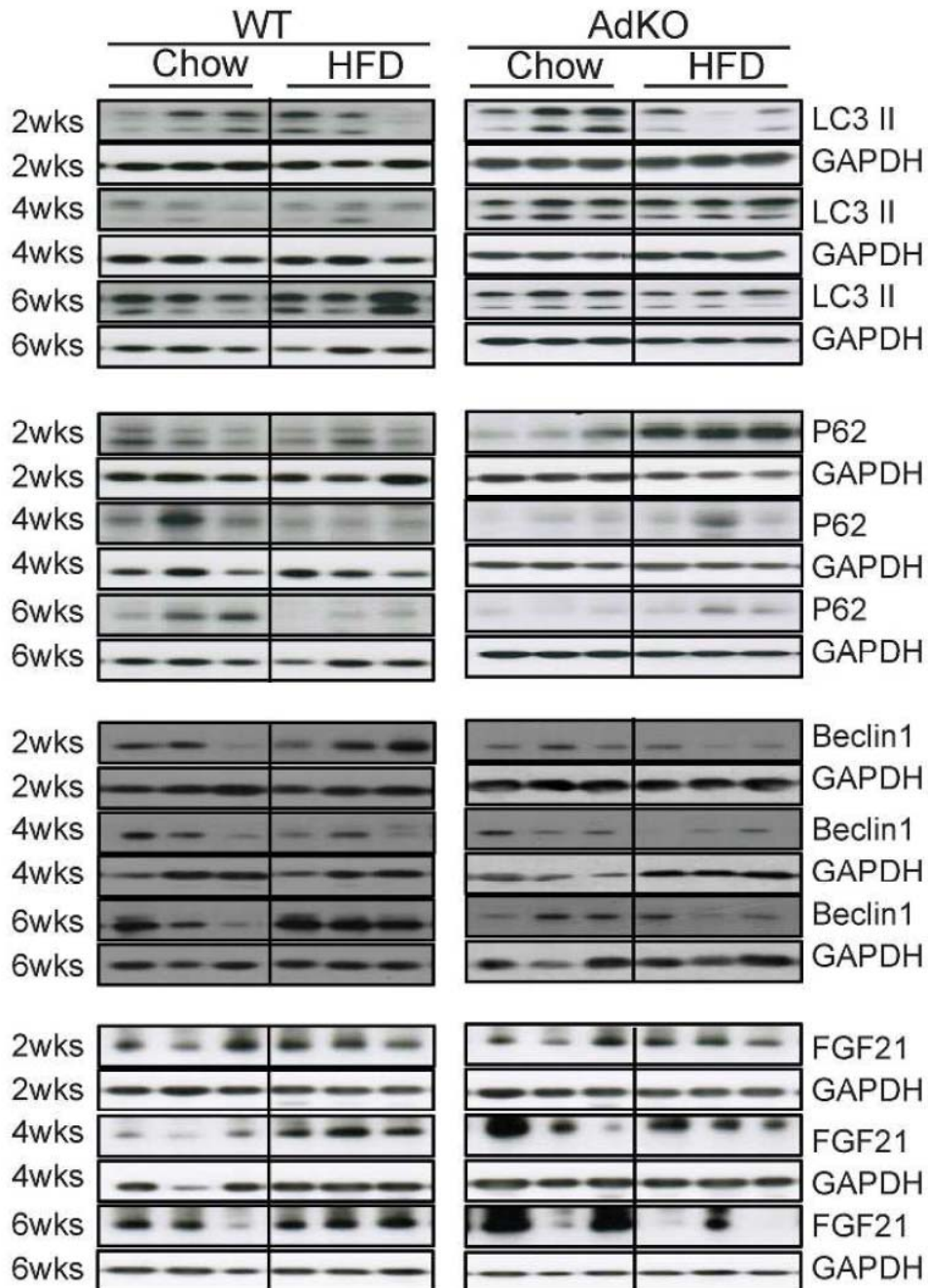
SUPPLEMENTARY DATA

**Supplementary Figure 2.** Complete dataset for the list of all oxidative stress-related genes tested by PCR array, categorized by functional gene group (left column) and heat map data showing the fold change in gene expression in response to HFD (HFD:chow) or Ad (HFD+Ad:HFD). Red indicates reduced, and green indicates increased gene expression.

| Functional Gene Group            | Gene               | HFD   | Ad    |
|----------------------------------|--------------------|-------|-------|
| Glutathione Peroxidase           | Gpx1               | Red   | Green |
|                                  | Gpx2               | Red   | Green |
|                                  | Gpx3               | Red   | Green |
|                                  | Gpx4               | Red   | Green |
|                                  | Gpx5               | Red   | Green |
|                                  | Gpx6               | Green | Red   |
|                                  | Gpx7               | Red   | Red   |
|                                  | Gpx8               | Red   | Red   |
| Peroxiredoxin                    | Gstk1              | Red   | Red   |
|                                  | Prdx1              | Red   | Red   |
|                                  | Prdx2              | Red   | Red   |
|                                  | Prdx3              | Red   | Green |
|                                  | Prdx4              | Red   | Red   |
|                                  | Prdx5              | Red   | Red   |
| Superoxide Dismutase             | Prdx6              | Green | Red   |
|                                  | Ehd2               | Red   | Red   |
|                                  | Sod1               | Red   | Green |
| Other Peroxidase                 | Sod2               | Red   | Green |
|                                  | Sod3               | Red   | Green |
|                                  | Aass               | Red   | Red   |
| Superoxide Metabolism            | Apc                | Red   | Green |
|                                  | Cat                | Red   | Green |
|                                  | Ctsb               | Red   | Red   |
|                                  | Duox1              | Red   | Red   |
|                                  | Epx                | Green | Red   |
|                                  | Kif9               | Green | Red   |
|                                  | Lpo                | Green | Red   |
|                                  | Mpo                | Red   | Red   |
|                                  | Prdx6-ps1          | Red   | Red   |
|                                  | Ptgs1              | Red   | Red   |
|                                  | Ptgs2              | Red   | Green |
|                                  | Rag2               | Green | Red   |
|                                  | Serpinb1b          | Red   | Red   |
|                                  | Slc41a3            | Red   | Red   |
|                                  | Tmod1              | Red   | Red   |
| Oxidative Stress Responsive Gene | Tpo                | Red   | Green |
|                                  | Ccs                | Red   | Green |
|                                  | Cyba               | Red   | Red   |
|                                  | Fmo2               | Red   | Red   |
|                                  | Ii19               | Green | Red   |
|                                  | I22                | Red   | Red   |
|                                  | Ncf2               | Red   | Red   |
|                                  | Nos2               | Red   | Red   |
|                                  | Nox1               | Red   | Red   |
|                                  | Nox4               | Red   | Red   |
|                                  | Noxa1              | Red   | Red   |
|                                  | Noxo1              | Red   | Red   |
|                                  | Recq14             | Red   | Red   |
|                                  | Scd1               | Red   | Red   |
|                                  | Oxygen Transporter | Als2  | Red   |
| Apoe                             |                    | Red   | Red   |
| Erc2                             |                    | Red   | Red   |
| Erc6                             |                    | Red   | Red   |
| Gab1                             |                    | Red   | Red   |
| Gsr                              |                    | Red   | Red   |
| Idh1                             |                    | Red   | Red   |
| Mpp4                             |                    | Red   | Red   |
| Nqo1                             |                    | Red   | Red   |
| Nudt15                           |                    | Red   | Red   |
| Nxn                              |                    | Red   | Green |
| Park7                            |                    | Red   | Red   |
| Ppp1r15b                         |                    | Red   | Red   |
| Pmp                              |                    | Red   | Red   |
| Psmb5                            |                    | Red   | Red   |
| Srxn1                            | Red                | Red   |       |
| Txnip                            | Red                | Red   |       |
| Txnrd1                           | Red                | Red   |       |
| Txnrd2                           | Red                | Red   |       |
| Txnrd3                           | Red                | Red   |       |
| Ucp3                             | Red                | Red   |       |
| Xpa                              | Red                | Red   |       |
| Other                            | Agr                | Red   | Red   |
|                                  | Atr                | Red   | Red   |
|                                  | Cygb               | Red   | Red   |
|                                  | Dnm2               | Red   | Red   |
|                                  | Fanc               | Red   | Red   |
|                                  | Hbq1a              | Red   | Red   |
|                                  | Irf172             | Red   | Red   |
|                                  | Mb                 | Red   | Red   |
|                                  | Ngb                | Green | Red   |
|                                  | Slc38a1            | Red   | Red   |
| Vim                              | Red                | Red   |       |
| Xfp1                             | Red                | Red   |       |

SUPPLEMENTARY DATA

**Supplementary Figure 3.** Representative Western blots for LC3, p62, Beclin1 and FGF21 in WT and AdKO mice 2,4,6 weeks after chow or HFD. Quantitative analysis of samples shown in figure 5.



SUPPLEMENTARY DATA

**Supplementary Figure 4.** Representative Western blots for LC3, p62, Beclin1 and FGF21 in AdKO mice at 2 and/or 6 weeks after HFD feeding ± adiponectin replenishment. Quantitative analysis of samples shown in figure 5.

