



**Supplementary Figure 2: Increased mitochondria and resistance to diet-induced obesity.** **a**, UCP3 and PGC1 mRNA levels were measured by quantitative RT-PCR (see Methods.). **b**, UCP3 and mCPT1 mRNA levels were measured by quantitative RT-PCR.  $n=4-7$  in a-b. **c**, Food intake per mouse measured, *WT*:  $2.81 \pm 0.07$  ( $n=12$ ); *S6K1<sup>-/-</sup>*:  $2.96 \pm 0.15$  g/day ( $n=15$ ),  $P=0.2$ , or normalized by body weight over 15 days on a high fat diet: *WT*:  $0.09 \pm 0.01$  ( $n=12$ ); *S6K1<sup>-/-</sup>*:  $0.13 \pm 0.01$  g/ g of body weight/day ( $n=15$ ). **d**, Representative MRI sections from the abdominal region of a *WT* and *S6K1<sup>-/-</sup>* mouse, where white regions indicate fat. \*,  $P < 0.01$ , \*\*,  $P < 0.001$ .