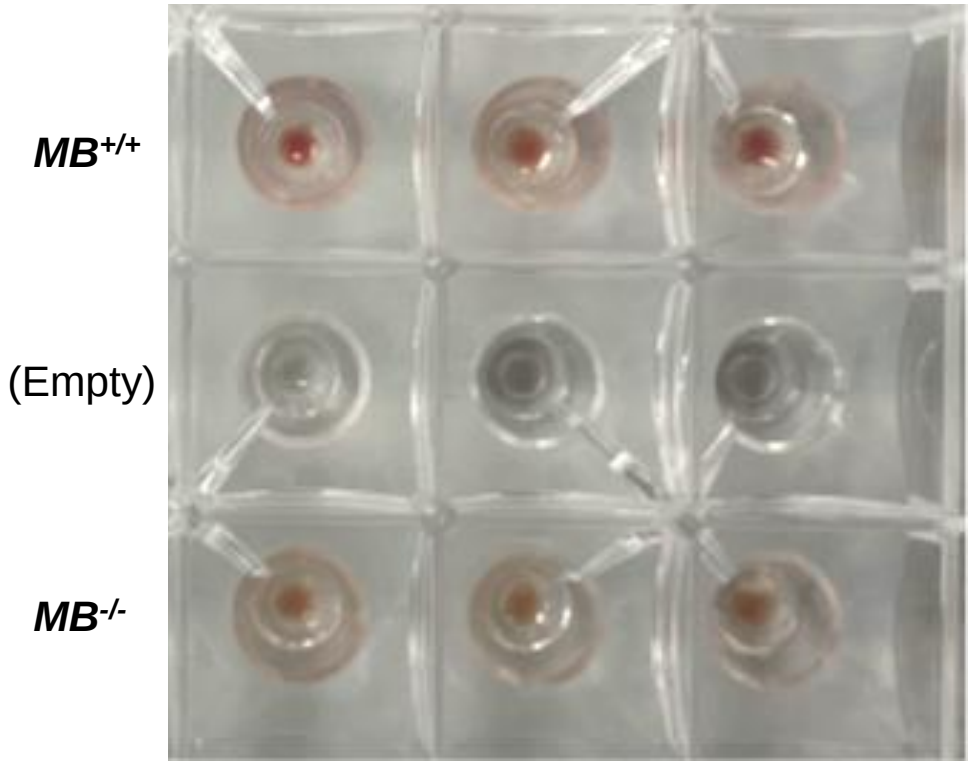
Supplementary Table S1. PCR primers

Genotyping Primers:

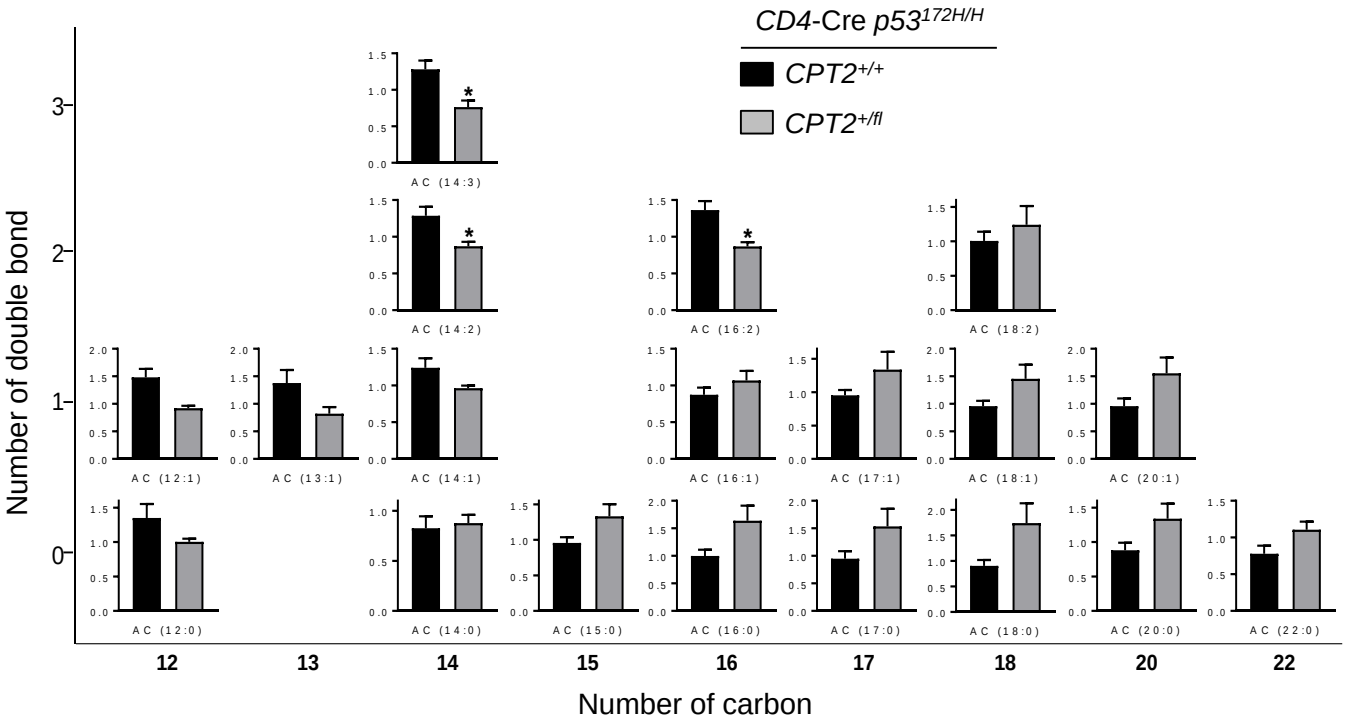
p53^{R172H}:	F	5'-CTTGGAGACATAGCCACACTG
	R	5'-AGCCTGCCTAGCTTCCTCAGG
MB$^{-/-}$:	F	5’-ACCAAGTGCTTCCCAGACAG
	R1	5’-CTCAGAACTGGAGCCTGGAC
	R2	5’- CCACACGCGTCACCTTAATA
CPT2$^{fl/fl}$:	F	5’-GCTGGCTTAGGAGATTCTTAACTTCC
	R	5’- AGCTCAGGTGGCAGAAAT GATACC
CD4-Cre:	F	5’-GCGGTCTGGCAGTAAAAACTATC
	R	5’-GTGAAACAGCATTGCTGTCAC TT

RT-PCR Primers:

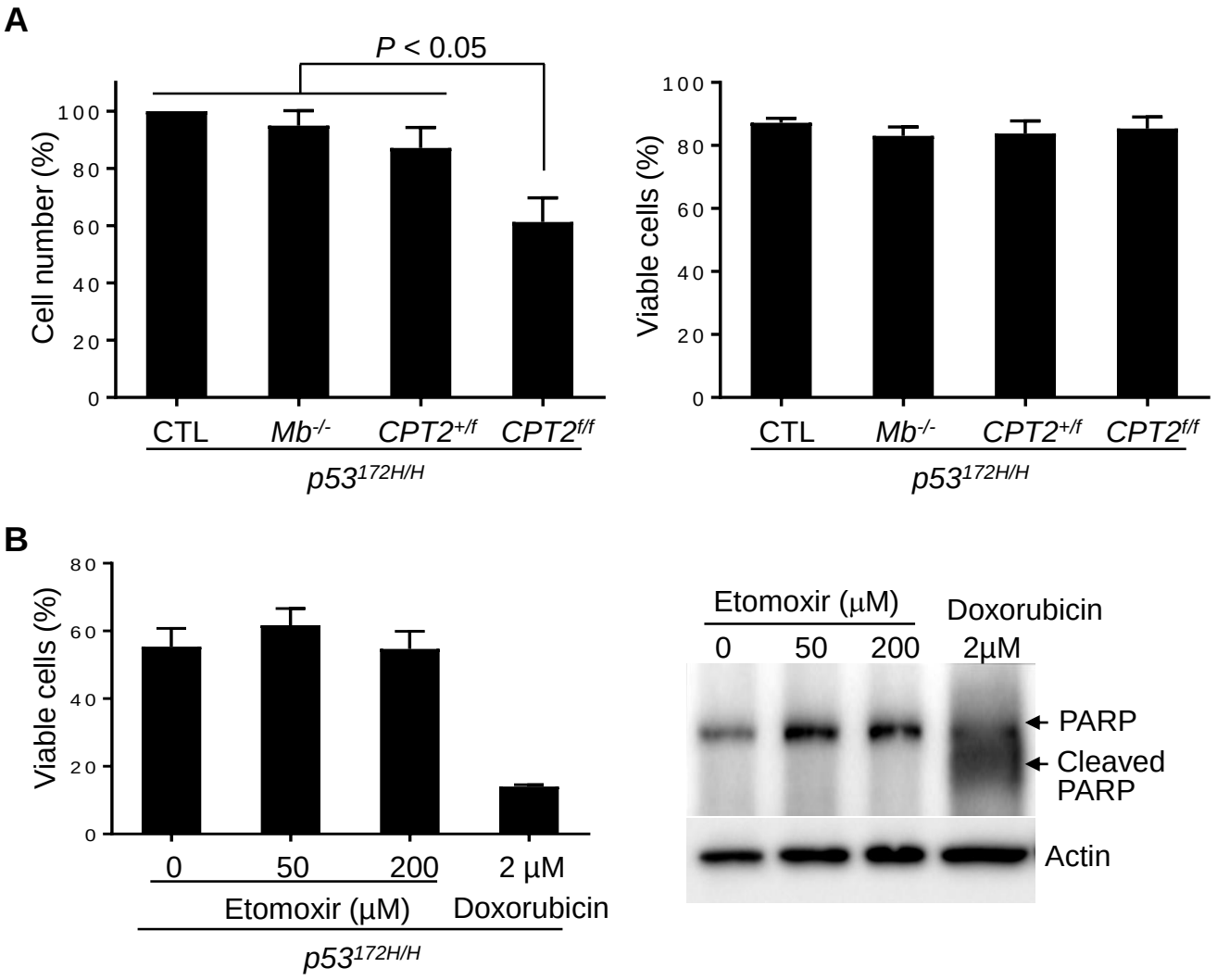
MAGL:	F	5'-GCCACGGACAGAGCGAAG
	R	5'-CCAGAAGGAAGACAGGAAGCC
GMPR:	F	5’-GAGTGCCGTCATTGAGTGTG
	R	5’-TCCGTATGACCCGAAAACAT
p21:	F	5’-CCCGTCTCAGTGTTGAGCCTT
	R	5’-GTTCCGCTGCTAATCAAAGTGC
EIF3F (TIF3):	F	5’-GACACAAGTCTCCAGAACGGC
	R	5’-TGGTCTCAAAGTCATCGGGAA
CPT1B:	F	5’-GAGCAGCACCCCAATCAC
	R	5’-TCTCGCCTGCAATCATGTAG
CPT2:	F	CTGTAGCACTGCCGCATTCA
	R	AGAGCAAACAAGTGTCGGTCAA



Supplementary Fig. S1. Myoglobin deficient soleus muscles appear depigmented. Whole soleus skeletal muscle isolated from age-matched male *p53*$^{172H/H}$ mice of the indicated *MB* genotype was embedded in each well of a XF-24 plate for oxygen consumption rate assay using a Seahorse XF-24 analyzer. Middle row wells are empty background.



Supplementary Fig. S2. Reciprocal changes in short- and long-chain acylcarnitines by CPT2 deficiency. All acylcarnitine species identified by lipidomic profiling in thymic tissue of *p53*$^{172H/H}$ mice with the indicated *CPT2* genotype are summarized (n = 5). **P* < 0.05.



Supplementary Fig. S3 . Effect of FAO inhibition on thymic lymphocytes in *p53*$^{172H/H}$ mice. **A**, Effect of *MB* or *CPT2* genotype state on thymic lymphocyte cell number (left panel) and viability (right panel) in control (CTL) *p53*$^{172H/H}$ genotype background (n ≥ 4). **B**, Thymic lymphocytes from 10 wk old *p53*$^{172H/H}$ mice were cultured for 4 d with FAO inhibitor etomoxir or for 20 h with 2 µM doxorubicin as a positive control in RPMI medium containing 10% FBS. Cell viability was determined by acridine orange/propidum iodide stain (left panel) (n = 3). The cell lysates were immunoblotted for cleaved PARP as a cell death marker (right panel).