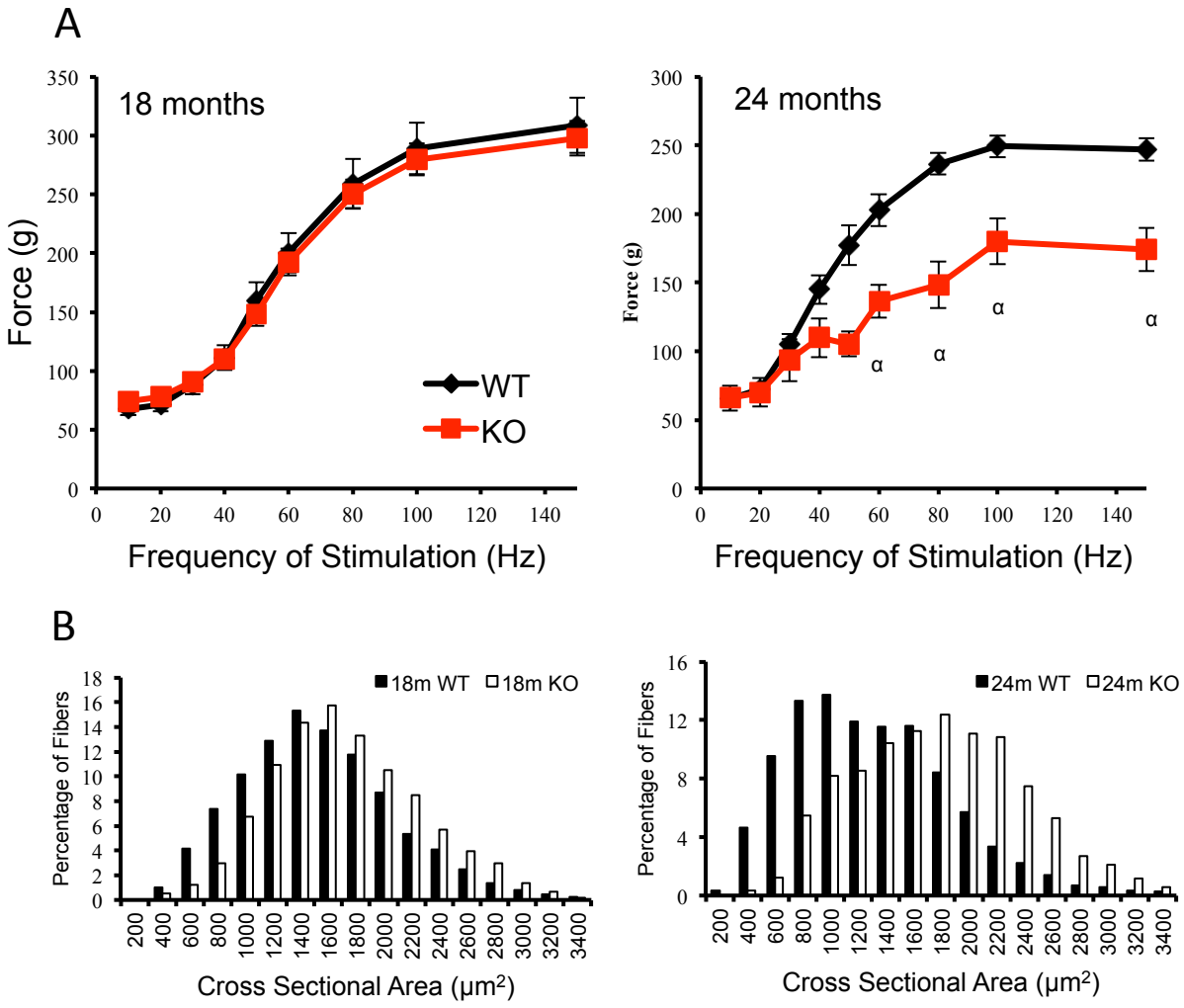
Supplemental Table 1

Muscle Isometric Twitch Properties of WT and MuRF1 KO

	Twitch Peak Tension (g)	Time to Peak Tension (ms)	Half Relaxation Time (ms)
8m WT	54.7 ±4.5	12.71 ± .48	8.30 ± .49
8m KO	51.9 ±3.5	12.51 ± .52	7.34 ± .52
12m WT	68.2 ±5.0	10.67 ± .37	9.07 ± .69
12m KO	69.0 ±8.3	11.66 ± .54	7.84 ± .64
18m WT	63.6 ±5.2	11.41 ± .56	9.88 ± .90
18m KO	72.3 ±3.5	11.91 ± .28	9.56 ± .37
24m WT	65.6±2.7	21.81 ± .67$^{\alpha}$	13.25 ± .85$^{\alpha}$
24m KO	65.0±9.3	21.59 ± 2.5$^{\alpha}$	13.41 ± 1.2$^{\alpha}$

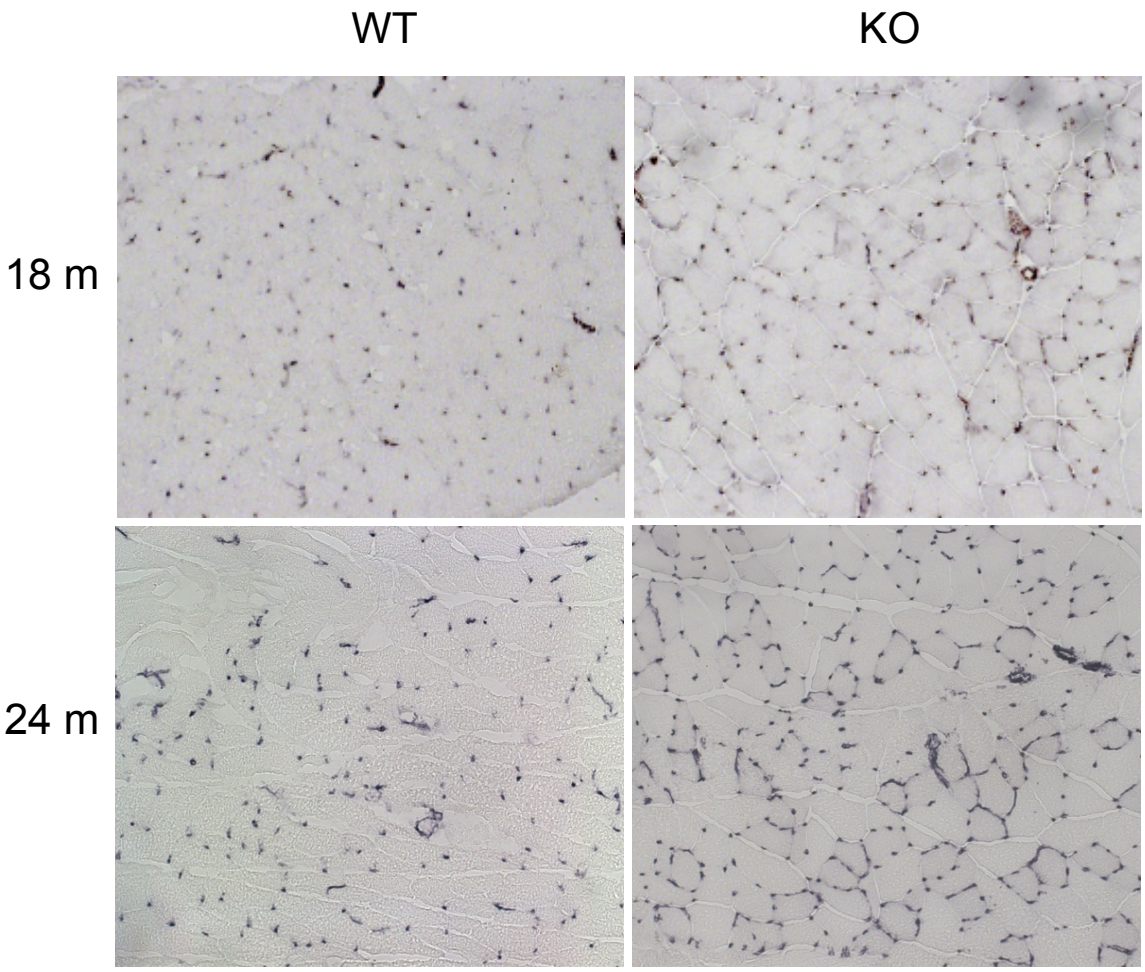
Values are expressed as mean ± SEM. Statistical significance is set at $p<0.05$; α indicates significant difference between ages within a genotype.

Supplemental Figure 1



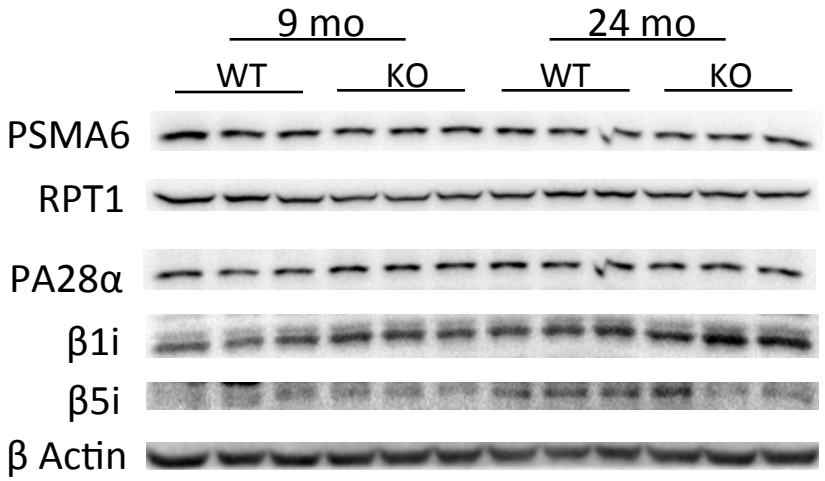
(A) Force-Frequency distribution and (B) distribution of fiber cross-sectional areas of the gastrocnemius muscle of wild type (WT) and MuRF1 KO mice at 18 and 24 months of age. Data are mean ± SEM, n ≥ 5 mice per group. Statistical significance at $p<0.05$, α indicates significant difference due to genotype at a specific age.

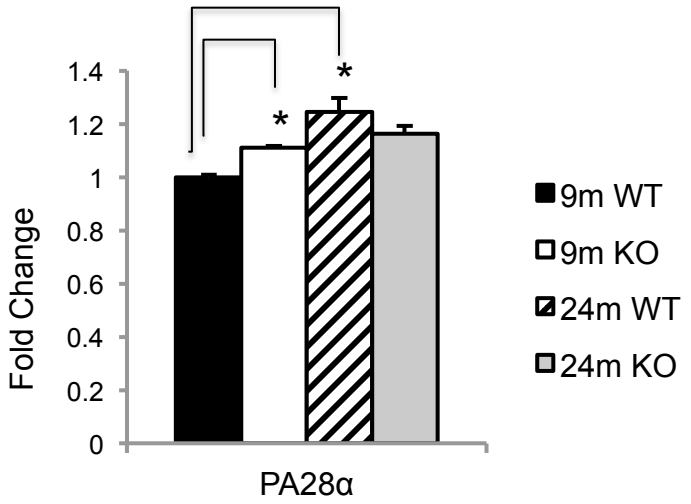
Supplemental Figure 2

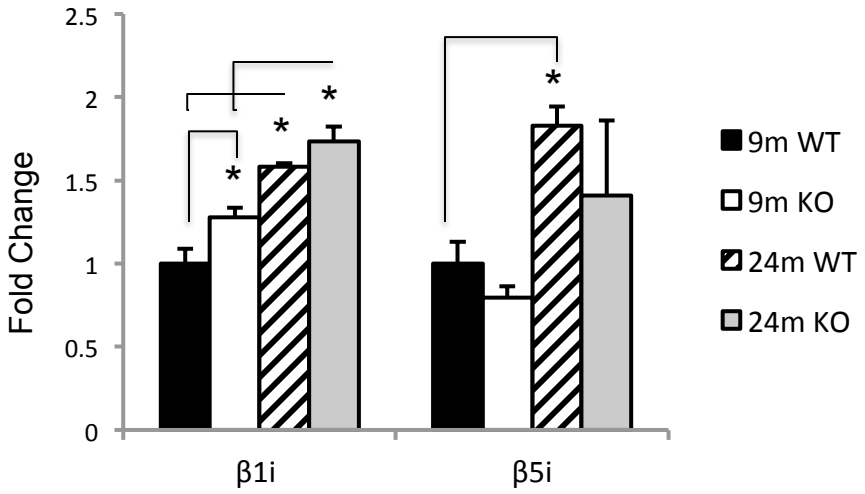


Representative cross-sections of the gastrocnemius muscle of 18 and 24m old WT and KO mice stained for CD31, an endothelial marker, to identify capillaries.

Supplement Figure 3

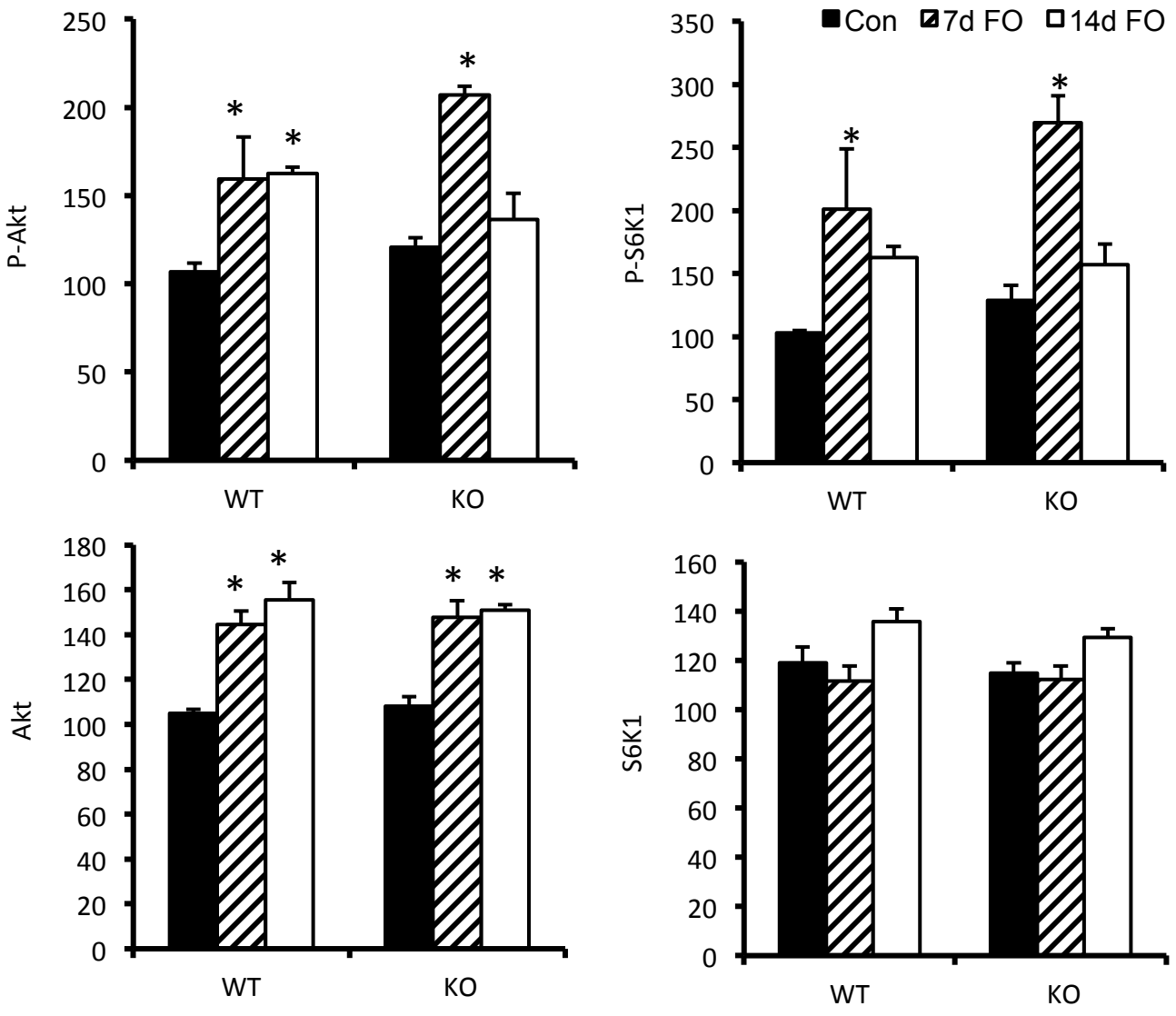






Means ± SEM (n=3-4 per group) are expressed as a fold change relative to the 9m WT mean. Statistical significance was set at $p<0.05$ and determined using a two-way ANOVA and Tukey's post hoc test for multiple comparisons.

Supplement Figure 4



Quantification (n=4) of the phosphorylation and total protein levels of Akt and S6K1 in the plantaris muscle of old (18-20 m) WT and KO mice following no treatment (Con, black) and FO for 7 (hatched) and 14 (white) days. Data are mean ± SEM. Statistical significance was set at $p<0.05$ and determined using a two-way ANOVA for growth and a one-way ANOVA for protein expression.