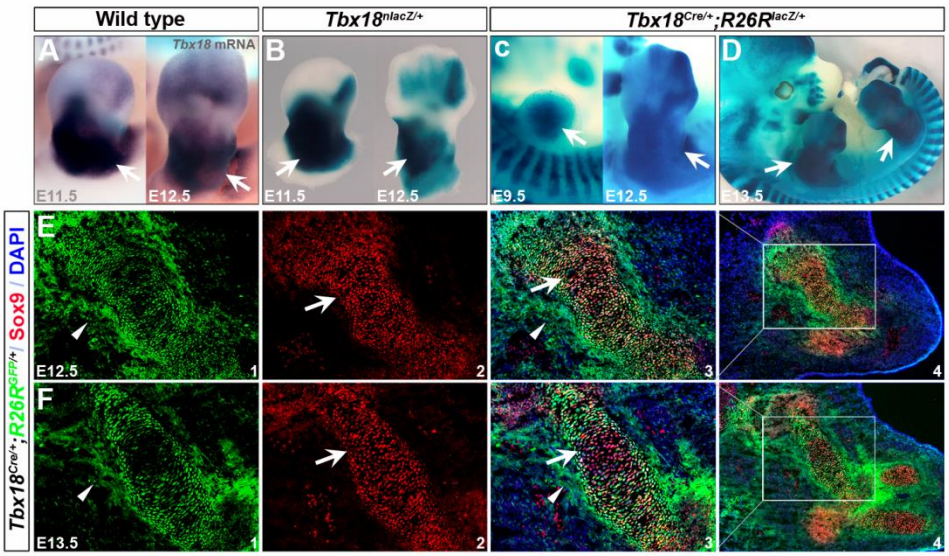

Figure S1 Expression and lineage of *Tbx18* in the developing limb. (A-B) RNA *in situ* hybridization and X-gal staining show *Tbx18* expression in the forelimbs at E11.5 and E12.5. **(C)** X-gal staining shows *Tbx18* lineage (*Tbx18*$^{Cre/+}$;*Rosa26*$^{lacZ/+}$) on the forelimb at E9.5 and E12.5. **(D)** Whole-mount view of *Tbx18* lineage with forelimb and hindlimb at E13.5. Arrows in A-D indicate positive *Tbx18* RNA or X-gal staining. **(E-F)** Immunofluorescence analysis of *Tbx18* lineage (*Tbx18*$^{Cre/+}$;*Rosa26*$^{GFP/+}$) with Sox9 staining on the forelimb at E12.5 and E13.5. Arrows in E,F indicate Sox9-positive chondrocytes and arrowheads indicate *Tbx18* lineage adjacent to chondrocytes. E3/F3 are high magnification images for E4/F4 in the square areas (humerus), and they are merged images of E1/2 and F1/2 with DAPI, respectively.

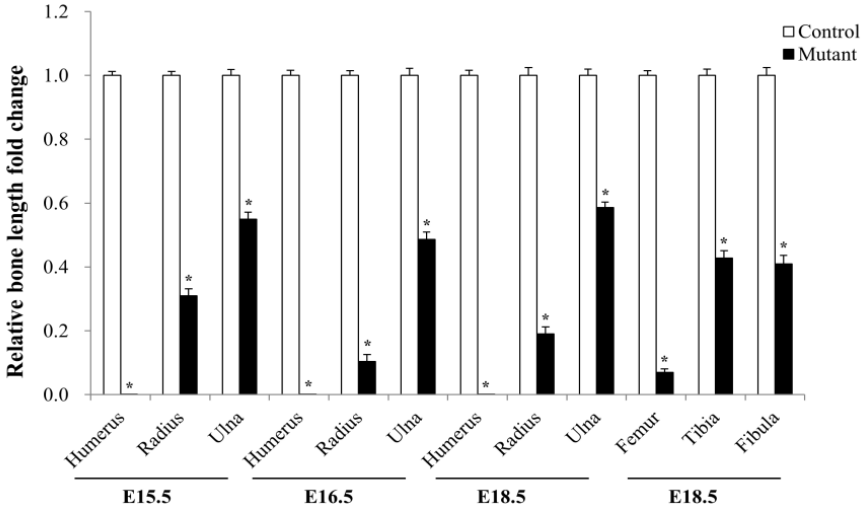

Figure S2 Reduced skeletal development in Smad4 mutant mice. Skeletons of E15.5-E18.5 embryos were stained with Alizarin red (calcified tissue) and Alcian blue (cartilage). Quantification of bone length was analyzed by Image J (n=3). $^{*}P < 0.05$ vs. control.