

**Appendix Table 2. Micro-CT analysis of bone metaphyses from *Col1a1*-cKO and *Prx1*-cKO mice versus their respective WT controls.** Mean values  $\pm$  standard deviation are shown for *Col1a1*- and *Prx1*-cKO mice and their respective WT controls (n=2-4 for each genotype at 24 wks) for humerus, femur, and tibia metaphyses, with statistically significantly different values ( $p < 0.05$  by independent samples t-test) indicated by bold type.

	TV (mm <sup>3</sup> )	BV (mm <sup>3</sup> )	BV/TV (%)	Tb.Th (mm)	Tb.Sp (mm)	Tb.N (1/mm)	SMI	Tb.Pf (1/mm)	BMD (g HA/cm <sup>3</sup> )
<b>Humerus</b>									
WT	<b>1.23 <math>\pm</math> 0.09</b>	0.02 $\pm$ 0.01	1.84 $\pm$ 0.94	0.04 $\pm$ 0.00	0.46 $\pm$ 0.10	0.47 $\pm$ 0.23	2.52 $\pm$ 0.17	37.76 $\pm$ 5.17	0.10 $\pm$ 0.03
<i>Col1a1</i> -cKO	<b>1.79 <math>\pm</math> 0.20</b>	0.02 $\pm$ 0.01	1.02 $\pm$ 0.66	0.04 $\pm$ 0.00	0.67 $\pm$ 0.13	0.26 $\pm$ 0.15	2.54 $\pm$ 0.16	40.85 $\pm$ 3.49	0.07 $\pm$ 0.02
WT	1.44 $\pm$ 0.21	0.02 $\pm$ 0.01	1.50 $\pm$ 0.34	0.04 $\pm$ 0.00	0.43 $\pm$ 0.05	0.39 $\pm$ 0.07	<b>2.71 <math>\pm</math> 0.05</b>	<b>40.58 <math>\pm</math> 0.87</b>	0.08 $\pm$ 0.01
<i>Prx1</i> -cKO	2.04 $\pm$ 0.30	0.06 $\pm$ 0.01	2.95 $\pm$ 0.10	0.04 $\pm$ 0.00	0.49 $\pm$ 0.07	0.69 $\pm$ 0.00	<b>2.41 <math>\pm</math> 0.01</b>	<b>33.24 <math>\pm</math> 0.78</b>	0.10 $\pm$ 0.01
<b>Femur</b>									
WT	2.60 $\pm$ 0.39	0.16 $\pm$ 0.09	6.27 $\pm$ 3.48	0.05 $\pm$ 0.00	<b>0.31 <math>\pm</math> 0.07</b>	1.38 $\pm$ 0.74	2.20 $\pm$ 0.21	27.84 $\pm$ 3.83	<b>0.16 <math>\pm</math> 0.05</b>
<i>Col1a1</i> -cKO	4.23 $\pm$ 1.10	0.07 $\pm$ 0.02	1.61 $\pm$ 0.31	0.04 $\pm$ 0.01	<b>0.58 <math>\pm</math> 0.07</b>	0.37 $\pm$ 0.05	2.38 $\pm$ 0.19	34.47 $\pm$ 5.89	<b>0.08 <math>\pm</math> 0.00</b>
WT	3.19 $\pm$ 0.49	0.23 $\pm$ 0.01	6.87 $\pm$ 1.87	0.05 $\pm$ 0.01	<b>0.25 <math>\pm</math> 0.01</b>	1.51 $\pm$ 0.26	2.23 $\pm$ 0.17	29.87 $\pm$ 6.59	0.16 $\pm$ 0.02
<i>Prx1</i> -cKO	5.84 $\pm$ 0.79	0.38 $\pm$ 0.18	6.29 $\pm$ 2.17	0.06 $\pm$ 0.01	<b>0.38 <math>\pm</math> 0.01</b>	1.09 $\pm$ 0.26	2.32 $\pm$ 0.12	26.37 $\pm$ 5.06	0.15 $\pm$ 0.03
<b>Tibia</b>									
WT	<b>1.42 <math>\pm</math> 0.15</b>	0.05 $\pm$ 0.04	3.64 $\pm$ 2.95	0.04 $\pm$ 0.00	<b>0.39 <math>\pm</math> 0.12</b>	0.89 $\pm$ 0.72	2.41 $\pm$ 0.35	35.22 $\pm$ 8.00	0.12 $\pm$ 0.05
<i>Col1a1</i> -cKO	<b>2.54 <math>\pm</math> 0.66</b>	0.05 $\pm$ 0.02	1.88 $\pm$ 0.82	0.04 $\pm$ 0.01	<b>0.56 <math>\pm</math> 0.01</b>	0.43 $\pm$ 0.13	2.22 $\pm$ 0.23	32.95 $\pm$ 6.83	0.08 $\pm$ 0.01
WT	2.47 $\pm$ 0.62	0.07 $\pm$ 0.03	2.74 $\pm$ 0.39	<b>0.03 <math>\pm</math> 0.00</b>	0.30 $\pm$ 0.02	0.80 $\pm$ 0.12	2.46 $\pm$ 0.10	<b>40.23 <math>\pm</math> 2.53</b>	0.11 $\pm$ 0.01
<i>Prx1</i> -cKO	4.00 $\pm$ 0.75	0.32 $\pm$ 0.15	7.46 $\pm$ 2.40	<b>0.06 <math>\pm</math> 0.00</b>	0.44 $\pm$ 0.13	1.18 $\pm$ 0.33	2.26 $\pm$ 0.05	<b>22.66 <math>\pm</math> 0.36</b>	0.17 $\pm$ 0.05

HA = Hydroxyapatite

TV = Tissue volume

BV = Trabecular bone volume

BV/TV = Trabecular bone volume fraction

Tb.Th = Trabecular thickness

Tb.Sp = Trabecular separation

Tb.N = Trabecular number

SMI = Structure model index

Tb.Pf = Trabecular pattern factor

BMD = Bone mineral density