

Supplemental Table 3: pQCT analysis of 9 and 12 months old *Scube3*<sup>N294K/-</sup> mice

Age	Analyzed Area	Parameter	<i>Scube3</i> <sup>WT</sup> female n=10	<i>Scube3</i> <sup>N294K/-</sup> female n=11	<i>Scube3</i> <sup>WT</sup> male n=10	<i>Scube3</i> <sup>N294K/-</sup> e n=7	genotype	sex	sex: genotype
9 months	femoral metaphysis	Total content [mg]	2.93 ± 0.26	2.66 ± 0.4	2.38 ± 0.15	2.2 ± 0.32	0.031	< 0.001	0.646
9 months	femoral metaphysis	Cortical / subcortical area [mm <sup>2</sup> ]	2.97 ± 0.33	2.6 ± 0.33	2.37 ± 0.19	2.19 ± 0.39	0.01	< 0.001	0.384
9 months	femoral metaphysis	Cortical area [mm <sup>2</sup> ]	2.82 ± 0.32	2.47 ± 0.33	2.23 ± 0.17	2.07 ± 0.38	0.015	< 0.001	0.355
9 months	femoral metaphysis	Trabecular density [mm <sup>2</sup> ]	283.6 ± 22.5	263.5 ± 37.8	293.4 ± 28.9	259.6 ± 31	0.012	0.772	0.501
9 months	femoral metaphysis	Cortical thickness [mm]	0.573 ± 0.057	0.498 ± 0.083	0.386 ± 0.033	0.371 ± 0.089	0.048	< 0.001	0.191
9 months	femoral diaphysis	Total content [mg]	2.8 ± 0.22	2.33 ± 0.26	2.56 ± 0.21	2.38 ± 0.19	< 0.001	0.235	0.059

9 months	femoral diaphysis	Total density [mg/cm <sup>3</sup> ]	1172.12 ± 35.26	1010.01 ± 69.83	1005.56 ± 43.33	972.14 ± 91.84	< 0.001	< 0.001	0.003
9 months	femoral diaphysis	Cortical / subcortical content [mg]	2.75 ± 0.22	2.26 ± 0.27	2.48 ± 0.22	2.3 ± 0.2	< 0.001	0.128	0.05
9 months	femoral diaphysis	Cortical / subcortical density [mg/cm <sup>3</sup> ]	1248.23 ± 26.45	1161.92 ± 50.79	1126.35 ± 30.23	1109.37 ± 48.68	< 0.001	< 0.001	0.013
9 months	femoral diaphysis	Cortical / subcortical area [mm <sup>2</sup> ]	2.2 ± 0.16	1.94 ± 0.17	2.2 ± 0.17	2.07 ± 0.15	0.001	0.261	0.239
9 months	femoral diaphysis	Cortical content [mg]	2.71 ± 0.22	2.22 ± 0.27	2.43 ± 0.21	2.25 ± 0.2	< 0.001	0.108	0.051
9 months	femoral diaphysis	Cortical density [mg/cm <sup>3</sup> ]	1289.4 ± 24.1	1206.4 ± 49.4	1165.1 ± 26.1	1153.3 ± 53.1	0.001	< 0.001	0.01
9 months	femoral diaphysis	Cortical area [mm <sup>2</sup> ]	2.1 ± 0.15	1.84 ± 0.17	2.09 ± 0.17	1.95 ± 0.15	0.001	0.348	0.226
9 months	femoral diaphysis	Trabecular area [mm <sup>2</sup> ]	0.18 ± 0.04	0.36 ± 0.07	0.35 ± 0.06	0.4 ± 0.19	0.001	0.003	0.049
9 months	femoral diaphysis	Endosteal circumference c [mm]	1.875 ± 0.171	2.411 ± 0.207	2.392 ± 0.182	2.512 ± 0.425	< 0.001	0.001	0.015
9 months	femoral diaphysis	Cortical thickness c [mm]	0.573 ± 0.032	0.472 ± 0.039	0.519 ± 0.032	0.485 ± 0.048	< 0.001	0.114	0.01
			n=11	n=7	n=10	n=7			
12 months	femoral metaphysis	Total content [mg]	3.05 ± 0.23	3.06 ± 0.45	2.32 ± 0.25	2.28 ± 0.27	0.916	< 0.001	0.832

12 months	femoral metaphysis	Total density [mg/cm <sup>3</sup> ]	807.37 ± 51.36	802.05 ± 81.87	585.66 ± 54.69	580.34 ± 50.35	0.796	< 0.001	1
12 months	femoral metaphysis	Total area [mm <sup>2</sup> ]	3.78 ± 0.25	3.82 ± 0.45	3.95 ± 0.15	3.93 ± 0.28	0.929	0.156	0.784
12 months	femoral metaphysis	Cortical / subcortical content [mg]	2.87 ± 0.28	2.87 ± 0.48	1.84 ± 0.29	1.82 ± 0.32	0.938	< 0.001	0.95
12 months	femoral metaphysis	Cortical / subcortical density [mg/cm <sup>3</sup> ]	909.16 ± 27.67	936.24 ± 49.28	799.42 ± 44.22	798.98 ± 32.36	0.325	< 0.001	0.309
12 months	femoral metaphysis	Cortical / subcortical area [mm <sup>2</sup> ]	3.16 ± 0.32	3.08 ± 0.55	2.3 ± 0.31	2.28 ± 0.34	0.675	< 0.001	0.814
12 months	femoral metaphysis	Cortical content [mg]	2.81 ± 0.27	2.82 ± 0.47	1.79 ± 0.29	1.77 ± 0.31	0.947	< 0.001	0.914
12 months	femoral metaphysis	Cortical density [mg/cm <sup>3</sup> ]	933.8 ± 29	959.5 ± 49.2	824.5 ± 45.6	825.7 ± 32.7	0.331	< 0.001	0.374
12 months	femoral metaphysis	Cortical area [mm <sup>2</sup> ]	3.02 ± 0.31	2.95 ± 0.52	2.17 ± 0.31	2.14 ± 0.34	0.692	< 0.001	0.871

12 months	femoral metaphysis	Trabecular content [mg]	$0.18 \pm 0.07$	$0.19 \pm 0.07$	$0.47 \pm 0.06$	$0.46 \pm 0.09$	0.99	< 0.001	0.591
12 months	femoral metaphysis	Trabecular density [mm <sup>2</sup> ]	$287.9 \pm 28.9$	$263.5 \pm 33.5$	$288.7 \pm 28$	$277.8 \pm 28.6$	0.093	0.468	0.513
12 months	femoral metaphysis	Trabecular area [mm <sup>2</sup> ]	$0.62 \pm 0.25$	$0.74 \pm 0.31$	$1.65 \pm 0.24$	$1.65 \pm 0.3$	0.51	< 0.001	0.514
12 months	femoral metaphysis	Periosteal circumference c [mm]	$6.889 \pm 0.226$	$6.915 \pm 0.405$	$7.046 \pm 0.137$	$7.026 \pm 0.262$	0.972	0.143	0.799
12 months	femoral metaphysis	Endosteal circumference c [mm]	$3.059 \pm 0.495$	$3.252 \pm 0.631$	$4.729 \pm 0.308$	$4.738 \pm 0.383$	0.531	< 0.001	0.566
12 months	femoral metaphysis	Periosteal circumference [mm]	$6.691 \pm 0.313$	$6.385 \pm 1.528$	$6.87 \pm 0.241$	$6.715 \pm 0.244$	0.357	0.311	0.762
12 months	femoral metaphysis	Endosteal circumference [mm]	$0.983 \pm 1.197$	$1.03 \pm 1.398$	$2.268 \pm 2.222$	$3.59 \pm 2.024$	0.266	0.003	0.3
12 months	femoral metaphysis	Cortical thickness c [mm]	$0.61 \pm 0.081$	$0.583 \pm 0.114$	$0.369 \pm 0.058$	$0.364 \pm 0.061$	0.579	< 0.001	0.687
12 months	femoral metaphysis	Cortical thickness [mm]	$0.26 \pm 0.275$	$0.233 \pm 0.191$	$0.16 \pm 0.159$	$0.302 \pm 0.162$	0.432	0.83	0.251

12 months	femoral metaphysis	Cortical thickness SD [mm]	0.0759 ± 0.0801	0.0963 ± 0.0776	0.066 ± 0.0694	0.1183 ± 0.0625	0.161	0.814	0.533
12 months	femoral diaphysis	Total content [mg]	2.95 ± 0.19	2.79 ± 0.27	2.55 ± 0.31	2.32 ± 0.31	0.046	< 0.001	0.711
12 months	femoral diaphysis	Total density [mg/cm <sup>3</sup> ]	1166.16 ± 55.66	1025.49 ± 43.73	966.04 ± 84.98	871.74 ± 79.01	< 0.001	< 0.001	0.333
12 months	femoral diaphysis	Cortical / subcortical content [mg]	2.91 ± 0.19	2.72 ± 0.26	2.45 ± 0.32	2.2 ± 0.31	0.024	< 0.001	0.752
12 months	femoral diaphysis	Cortical / subcortical density [mg/cm <sup>3</sup> ]	1238.68 ± 31.84	1164.31 ± 30.93	1102.6 ± 58.62	1035.99 ± 58.31	< 0.001	< 0.001	0.811
12 months	femoral diaphysis	Cortical content [mg]	2.86 ± 0.19	2.67 ± 0.26	2.4 ± 0.32	2.15 ± 0.31	0.023	< 0.001	0.771
12 months	femoral diaphysis	Cortical density [mg/cm <sup>3</sup> ]	1280.5 ± 29.4	1207 ± 27.6	1141.5 ± 58.8	1072.8 ± 57.6	< 0.001	< 0.001	0.881
12 months	femoral diaphysis	Endosteal circumference c [mm]	1.899 ± 0.328	2.53 ± 0.238	2.58 ± 0.24	2.866 ± 0.339	< 0.001	< 0.001	0.097
12 months	femoral diaphysis	Cortical thickness c [mm]	0.595 ± 0.051	0.528 ± 0.037	0.505 ± 0.049	0.463 ± 0.043	0.002	< 0.001	0.426