



The serine synthesis pathway drives osteoclast differentiation through epigenetic regulation of NFATc1 expression

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Supplementary Data Table 1. Phenotype of 8-week-old female *Phgdh*^{oc+} and *Phgdh*^{oc-} mice.

	<i>Phgdh</i> ^{oc+}	<i>Phgdh</i> ^{oc-}
Body weight (g)	19.3 ± 2.3	17.8 ± 0.78
Tibia length (mm)	15.2 ± 1.8	14.2 ± 1.4
BV/TV (%)	6.9 ± 1.6	11.2 ± 2.4 *
Tb.Th (µm)	40.5 ± 2.2	44.3 ± 3.0 *
Tb.N (1/µm)	0.0024 ± 0.0014	0.0034 ± 0.0021
Tb.Sp (µm)	289.5 ± 40.6	237.6 ± 50.1
Ct.Th (µm)	121.0 ± 10.1	136.5 ± 9.0 *
Ec.Pm (mm)	5.9 ± 0.92	5.2 ± 0.12 *
Ma.Ar (mm ²)	0.98 ± 0.11	0.82 ± 0.14 *
Ps.Pm (mm)	6.4 ± 0.77	6.1 ± 0.27
Po (%)	2.5 ± 0.58	2.3 ± 0.90

BV/TV: $P=0.0018$; Tb.Th: $P=0.020$; Ct.Th: $P=0.008$; Ec.Pm: $P=0.03$; Ma.Ar: $P=0.042$ (unpaired, two-tailed Student's t-test with $*p<0.05$ vs *Phgdh*^{oc+}).

Supplementary Data Table 2. Primer sequences for qRT-PCR.

Gene	Forward (5'-3')	Reverse (5'-3')
<i>Acp5</i>	ACTTCCCCAGCCCTTACTACC	TCAGCACATAGCCCACACCG
<i>Atp6v0d2</i>	TCAGATCTCTTCAAGGCTGTGCTG	GTGCCAAATGAGTTCAGAGTGATG
<i>Bglap</i>	GGCCCTGAGTCTGACAAAGC	GCTCGTCACAAGCAGGGTTAA
<i>CalcRec</i>	AACCGAACCTGGTCCAACCTATACT	TCAGCATGGAAGCAACCAAA
<i>cMyc</i>	GATTCCACGGCCTTCTCTC	TCTTCTTGCTCTTCTTCAGAGTC
<i>Col1a1</i>	TGTCCCAACCCCAAGAC	CCCTCGACTCCTACATCTTCTGA
<i>Csfr1</i>	GCAGTACCACCATCCACTTGTA	GTGAGACACTGTCCTTCAGTGC
<i>Ctsk</i>	TGTGGACTGTGTGACTGAGAATTATG	CCTTTGCCGTGGCGTTAT
<i>Dcstamp</i>	AAACTACGTGGAGAGAAGCAAGGA	CAGAATAATACTGAGAGGAACCCAAGT
<i>Got2</i>	TGAAGTGTTGAAAAGCGGCCG	TTGGGCAGAAAGACATCTCGG
<i>Gpt</i>	CTGAGGTTATCCGTGCCAATA	CCGGACTGCTCAGAAGATTG
<i>Hprt</i>	TTATCAGACTGAAGAGCTACTGTAATGATC	TTACCAGTGTCAATTATATCTTCAACAATC
<i>Irf8</i>	GGAAAGCCTTACCTGCTGAC	AAGGTCACCGTGGTCCTTAG
<i>Jmjd3</i>	CAACTCCATCTGGCTGTTACTG	CCTTCTGCAACCAATTCCAG
<i>Mmp9</i>	CCAAAGACCTGAAAACCTCCAA	GTAGAGACTGCTTCTCTCCCATCAT
<i>Nfatc1</i>	CTCGAAAGACAGCACTGGAGCAT	CGGCTGCCTTCCGTCTCATAG
<i>Opg</i>	GAAGGGCGTTACCTGGAGATC	CTGAATTAGCAGGAGGCCAAAT
<i>Phgdh</i>	CGATGAAAGATGGCAAATGGG	GCCACCTCTCTTCCAATTCT
<i>Psat1</i>	GCAGCTACTAGACTACAGAGGA	GCTAGCAATTCCCTCACAAGA
<i>Rank</i>	GAGCTCAGCATCCCTTGCA	CCCTGGTGTGCTTCTAGCTTTC
<i>Rankl</i>	CATTTGCACACCTCACCATCA	TTGCTTAACGTCATGTTAGAGATCTTG
<i>Runx2</i>	TACCAGCCACCGAGACCAA	AGAGGCTGTTTGACGCCATAG
<i>Slc1a4</i>	CAGTGGACTCTTTCCTCGATTT	ATGGGTCACCACTGTGTAATC
<i>Slc6a9</i>	GGGAGGAGCCTTCATGTTC	AGGAAAGCTCCATGAAGAAGAG