## Supplemental material

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Obri et al., http://www.jcb.org/cgi/content/full/jcb.201403138/DC1

Figure S1. **Osteoblast-specific deletion of Hdac4.** (A) Detection of the deletion allele of Hdac4 by PCR in genomic DNA isolated from tissues of Hdac $c4_{osb}^{-/-}$ . PCR for gapdh was used as a loading control. Analysis of the deletion efficiency of the Hdac4 allele with the Runx2-cre transgene in different tissues from Hdac $4_{osb}^{-/-}$  (n = 3) compared with Hdac $4^{fl/fl}$  (n = 3) mice. (B) Analysis of the expression of Hdac4 in WT and Hdac $5^{-/-}$  bones (left) and expression of Hdac5 in Hdac $4^{fl/fl}$  and Hdac $4_{osb}^{-/-}$  bones. Results are represented as fold changes compared with levels seen in WT or Hdac $4^{fl/fl}$  (n = 4) and Hdac $4^{-/-}$  (n = 4) osteoblasts. Results are shown as fold changes compared with levels seen in Hdac $4^{fl/fl}$  bones. Results are given as means  $\pm$  SEM. \*, P < 0.05 by Student's t test.



Figure S2. **Osteoblast-specific deletion of Mef2a and Mef2c.** (A) Detection of the mutated allele of Mef2a or Mef2c by PCR in genomic DNA isolated from tissues of  $Mef2a_{osb}^{-/-}$  or  $Mef2c_{osb}^{-/-}$  mice. PCR for gapdh was used as a loading control. (B) Analysis of the deletion efficiency of the Mef2a or Mef2a or Mef2a are given as means  $\pm$  SEM. \*, P < 0.05 by Student's *t* test.



Figure S3. **PTH regulation of Hdac4 expression is independent of Smurf2 or Synv1 inactivation.** (A) Analysis of the expression of Hdac4 in vehicle- or 10 nM PTH-treated WT osteoblasts for 2 h. Results are represented as a fold change compared with vehicle-treated WT osteoblasts. (B) Analysis of the expression of Smurf2 and Synv1 in primary osteoblasts transfected with either Smurf2 (left) or Synv1 (right) siRNA. Results are represented as a fold change compared with levels in scrambled siRNA-transfected cells. (C) Analysis of Hdac4 expression in scrambled-, Smurf2-, or Synv1 siRNA-transfected osteoblasts treated with vehicle or 10 nM PTH for 2 h. Results are represented as fold changes compared with levels seen in vehicle-treated scrambled siRNA-transfected cells. Results are given as means  $\pm$  SEM. \*, P < 0.05 by Student's t test.

## Table S1. Primers used in this study

Gene name	Primers
Hdac9	5'-CGCCACCGACCCCTGAATCG-3' and 5'-GCCAGCGTGCTCTGAGGCAA-3'
Hdac7	5'-TTCCTTCCATTGTCATCCTACCCGG-3' and 5'-CAGAGCGACTGTGAGACGGCGA-3'
Hdac5	5'-GTCAAAGGAGCCCACGCCAGG-3' and 5'-TTGGGGTGCTGTGGGAGGGAA-3'
Hdac4	5'-CCTTGACCAGAGCTCTCCACCCC-3' and 5'-GGTTGTAGGAGGCTGACACCCCA-3'
Rankl	5'-AAGATGCGACGTACTTTGGG-3' and 5'-CGTGGGCCATGTCTCTTAGT-3'
Opg	5'-GAAAGACCTGCAAATCGAGC-3' and 5'-TTGTGAAGCTGTGCAGGAAC-3'
Mef2a	5'-AGTACCGGCAGTGCAAGTGGGA-3' and 5'-CCTGGTGGCGGGGGGAGACTTT-3'
Mef2b	5'-CGCCCGCCTCACTTTCGACC-3' and 5'-GGCTTCTTGAGGTGCCCAATCCC-3'
Mef2c	5'-GCCGCACGAGAGCCGGACAA-3' and 5'-AGCTGGGAGGTGGAACAGCACAC-3'
Mef2d	5'-TTCGCTGTTTCCCGTCGGAGC-3' and 5'-GGCTGCTGGGTGGTGATCAGG-3'
Runx2	5'-CAGCGTCAACACCATCATTC-3' and 5'-CAGACCAGCAGCACTCCATA-3'
Osterix	5'-AGCTGCAAGCTCTCTGTAACC-3' and 5'-CCTCTCGACCCGACTGCAGAT-3'
Collal	5'-TGTTCAGCTTTGTGGACCTC-3' and 5'-TCAAGCATACCTCGGGTTTC-3'
Col1a2	5'-GAAGGGGATCTCGGGGTTG-3' and 5'-GGGAATGTCCTCTGCGATGAC-3'
Foxo1	5'-GCTGCAATGGCTATGGTAGGA-3' and 5'-GTCACAGTCCAAGCGCTCAAT-3'
Creb	5'-CTGCCTCAGGCGATGTACAAAC-3' and 5'-CTGTTCTTCATTAGACGGACC-3'
c-fos	5'-ATTTGACTGGAGGTCTGCCTG-3' and 5'-CACGTTGCTGATGCTCTTGAC-3'
Smurf2	5'-GTCAGGTCCCAGCGACATAG-3' and 5'-TAGGCACTCGTGGATCATGC-3'
Smurf1	5'-ACGACTGGAAGTCCAACACC-3' and 5'-CAGAGCCTTGAAGCCTTGGA-3'
Btrc	5'-CCCCAACTGACATCACCCTC-3' and 5'-CACGCTTGTGCCCATTTAGG-3'
Stub 1	5'-CTTCCTACCGGCGGTCCAG-3' and 5'-GAGACCTACCCTGCTCAGACC-3'
Wwp1	5'-CCATCAGGGTGGGAACAGAG-3' and 5'-GCTGCCAGGTTGTTGTTCTG-3'
Wwp2	5'-ACCAGTCTTCGAGTGCTTCG-3' and 5'-GCTGGCTCCTGTATCATCCC-3'
Atf4	5'-ATGGCGCTCTTCACGAAATC-3' and 5'-ACTGGTCGAAGGGGTCATCAA-3'
Sclerostin	5'-AGCCTTCAGGAATGATGCCAC-3' and 5'-TTTGGCGTCATAGGGATGGT-3'
Cbl	5'-GCGGTTGTGTCAAAACCCAAA-3' and 5'-AAGAGGCTGATAGTCTGCTTAGT-3'
Fblx15	5'-GCCCGTGGAATCTGTGGAC-3' and 5'-GGAGGGGAGCAAGAACCAG-3'
Rbx1	5'-GCGGCGATGTGGATA-3' and 5'-GTTGGCCTGACATTCGATACA-3'
Itch	5'-TGGGTAGTCTGACCAT0GAAATCT-3' and 5'-GGGGTAACAATAACTGTGAGGG-3'