

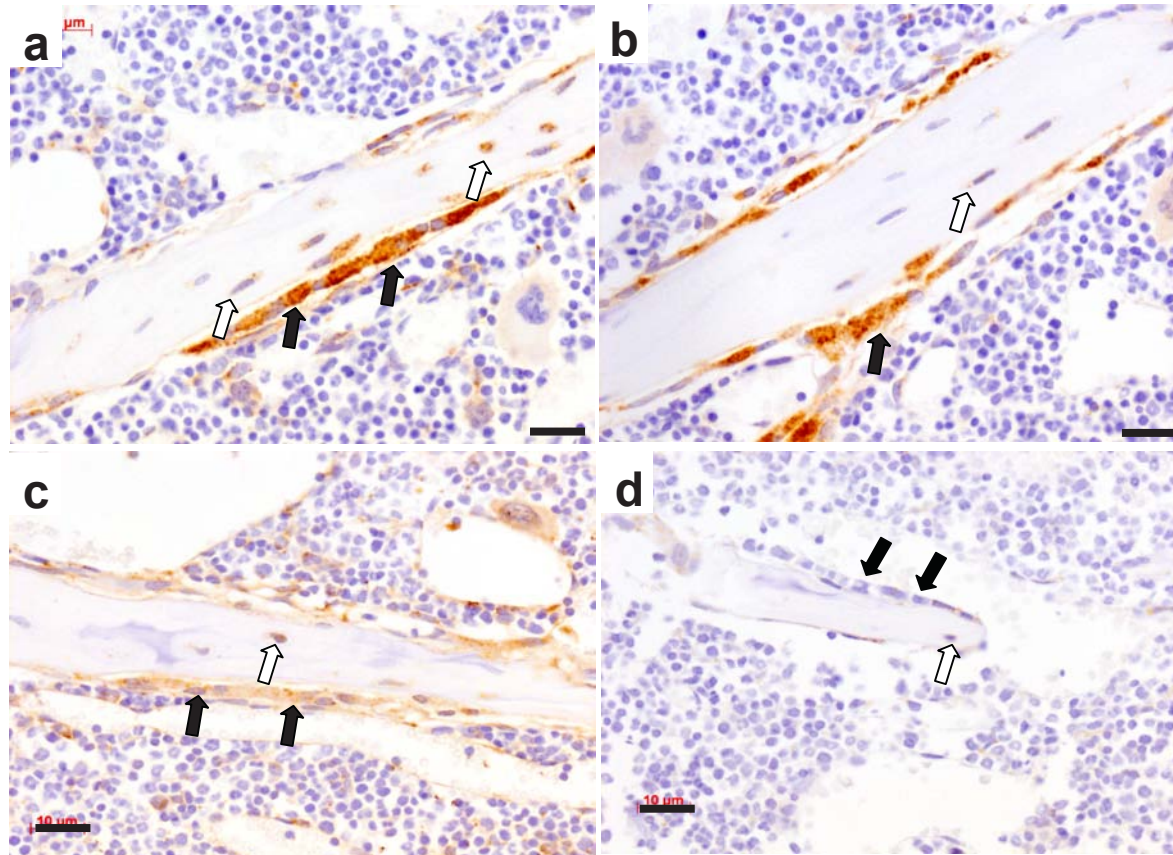
Supplementary Tables

Supplementary Table 1: Effects of 50ng/ml mOSM on mRNA levels of key genes in Kusa 4b10 cells cultured for 17 days in osteoblast differentiation medium. Data are mean ratios of the gene of interest to HPRT1 \pm SEM from 3 independent experiments (triplicate wells); *, $p < 0.05$, **, $p < 0.01$, ***, $p < 0.001$ vs time-matched control (Ctrl).

Ratio:HPRT1		0.5h	1h	2h	4h
PPAR γ	Ctrl	0.823 \pm 0.292	0.647 \pm 0.073	0.716 \pm 0.203	0.450 \pm 0.152
	mOSM	0.804 \pm 0.112	0.819 \pm 0.093	0.393 \pm 0.061	0.218 \pm 0.028
C/EBP α	Ctrl	0.121 \pm 0.031	0.079 \pm 0.010	0.117 \pm 0.035	0.096 \pm 0.019
	mOSM	0.092 \pm 0.018	0.067 \pm 0.016	0.055 \pm 0.014	0.053 \pm 0.024
C/EBP β	Ctrl	0.067 \pm 0.011	0.066 \pm 0.017	0.053 \pm 0.011	0.032 \pm 0.004
	mOSM	0.084 \pm 0.015	0.124 \pm 0.022*	0.139 \pm 0.009**	0.133 \pm 0.049*
C/EBP δ	Ctrl	0.036 \pm 0.012	0.027 \pm 0.001	0.048 \pm 0.009	0.017 \pm 0.001
	mOSM	0.357 \pm 0.109*	0.521 \pm 0.053***	0.154 \pm 0.026*	0.154 \pm 0.060*
RANKL	Ctrl	1.87 \pm 0.85	3.45 \pm 1.22	1.93 \pm 0.45	2.03 \pm 1.09
	mOSM	3.67 \pm 2.74	5.13 \pm 1.13	5.62 \pm 3.42	18.77 \pm 0.52***
IL-6	Ctrl	0.010 \pm 0.004	0.028 \pm 0.017	0.018 \pm 0.007	0.009 \pm 0.006
	mOSM	0.286 \pm 0.038**	1.584 \pm 0.135***	1.732 \pm 0.194***	1.497 \pm 0.192**
SOST ($\times 10^{-3}$)	Ctrl	0.39 \pm 0.23	0.68 \pm 0.39	0.39 \pm 0.25	0.17 \pm 0.15
	mOSM	0.12 \pm 0.13	0.34 \pm 0.17	0.041 \pm 0.033*	0.006 \pm 0.0003*

Supplementary Table 2: Altered femoral cortical bone and vertebral bone in adult *Osmr*^{-/-} mice. Values are mean ± SEM. For vertebral samples n=5-6 per group. For femoral samples n=7-8 per group; *, p<0.05, **, p<0.01; ***, p<0.001 vs sex-matched wild type (WT).

	Male		Female	
	WT	<i>Osmr</i> ^{-/-}	WT	<i>Osmr</i> ^{-/-}
Femoral metaphyseal Cortical Thickness (μm)	110±7	147±5***	186±5	198±4*
Femoral metaphyseal Periosteal Circumference (mm)	6.55±0.06	6.74±0.07*	6.06±0.06	6.53±0.17*
Femoral diaphyseal Cortical BMD (mg/mm ³)	1098±6	1136±11**	1118±4	1142±7**
Vertebral BV/TV (%)	9.42±0.87	14.3±1.49*	8.42±0.71	17.77±5.26*
Vertebral MAR (μm/day)	1.11±0.04	1.01±0.02*	1.83±0.09	1.38±0.11**
Vertebral MS/BS (%)	11.7±3.1	6.8±1.4	26.4±3.4	18.4±2.1*
Vertebral (BFR/BS) (mm ³ /mm ² /y)	52±17	26±18	175±25	90±7**



Supplementary Figure 1: OSM (a,b) and OSMR (c,d) immunohistochemistry in wild type (a,c) and *Osmr*^{-/-} (b,d) bones. Positive staining for OSM is present in osteoblasts (black arrows), osteocytes (white arrows) and bone lining cells in both wild type and *Osmr*^{-/-} samples. OSMR is only present in wild type osteoblasts, osteocytes, bone lining cells, endothelial cells and some marrow cells (c), but was not present in *Osmr*^{-/-} (d). Scale bar = 10μm.