

**Functional differences between AMPK α 1 and α 2 subunits in osteogenesis,
osteoblast-associated induction of osteoclastogenesis, and adipogenesis**

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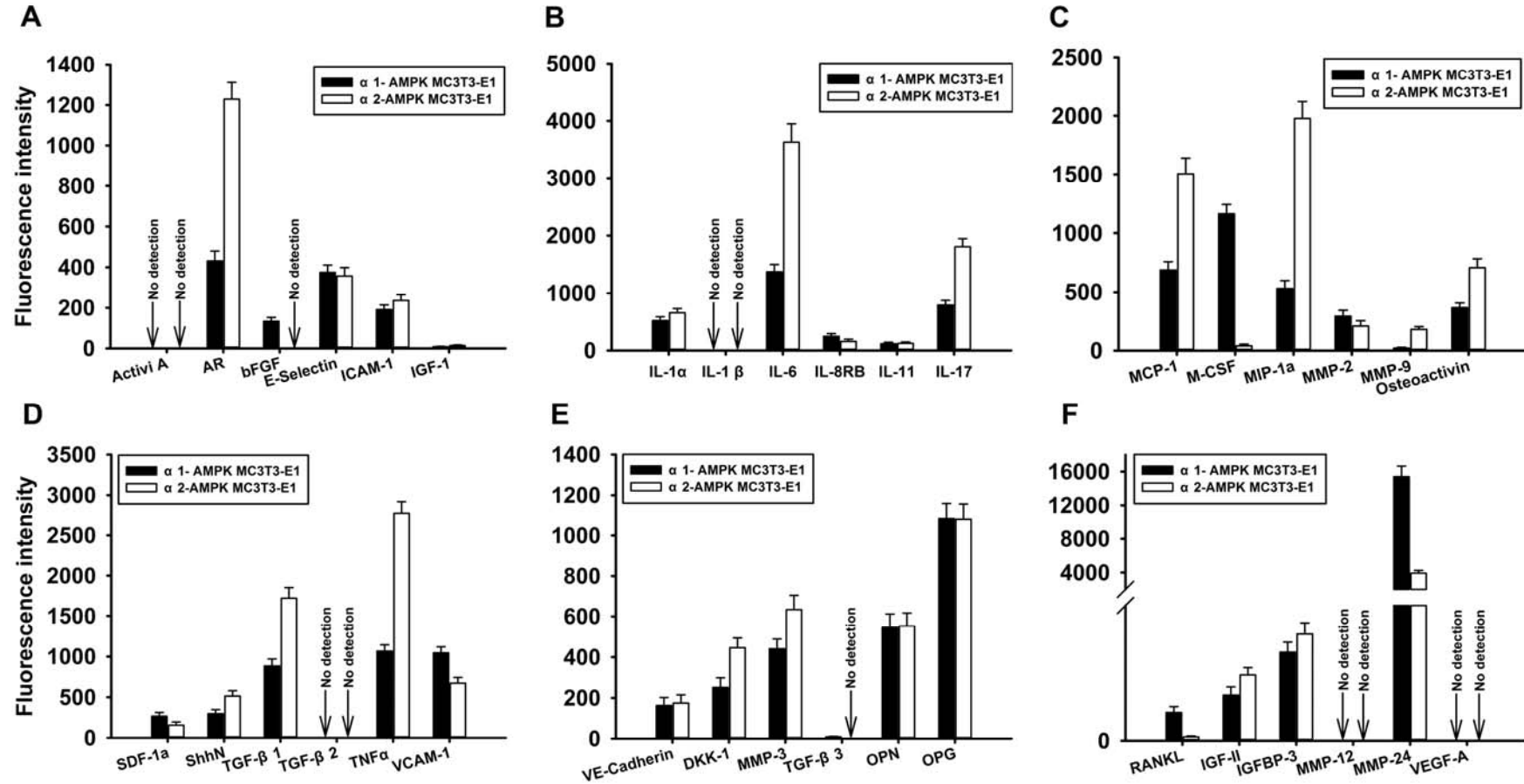
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Supplementary table 1: primer sequences

Gene	Primer sequences (5'-3')	Product length (bp)
hAMPK α 1	TTGAAACCTGAAAATGTCCTGCT (F) GGTGAGCCACAACCTTGTCTT (R)	113
hAMPK α 2	GTGAAGATCGGACACTACGTG (F) CTGCCACTTTATGGCCTGTTA (R)	100
hALP	AACATCAGGGACATTGACGTG (F) GTATCTCGGTTTGAAGCTCTTCC (R)	159
hBSP	CACTGGAGCCAATGCAGAAGA (F) TGGTGGGGTTGTAGGTTCAA (R)	106
hOC	GAGCCCCAGTCCCCTACCCG (F) GACACCCTAGACCGGGCCGT (R)	137
h β -actin	CATGTACGTTGCTATCCAGGC (F) CTCCTTAATGTCACGCACGAT (R)	250
mRunx2	TTCAACGATCTGAGATTTGTGGG (F) GGATGAGGAATGCGCCCTA (R)	221
mALP	CCAACTCTTTGTGCCAGAGA (F) GGCTACATTGGTGTGAGCTTTT (R)	110
mBSP	ATGGAGACGGCGATAGTTCC (F) CTAGCTGTTACACCCGAGAGT (R)	148
mOC	CTGACCTCACAGATCCCAAGC (F) TGGTCTGATAGCTCGTCACAAG (R)	187
mAMPK α 1	TACTCAACCGGCAGAAGATTCG (F) AGACGGCGGCTTTCCTTTT (R)	220
mAMPK α 2	CAGGCCATAAAGTGGCAGTTA (F) AAAAGTCTGTCTGGAGTGCTGA (R)	156
mNFAT2	TTCGAGTTCGATCAGAGCGG (F) TCTCTGTAGGCTTCCAGGCT (R)	419
mTRACP	GAGAAAGTCAAGGGAGTGGCA (F) ATGATGAAGTCAGCGCCCAT (R)	330
mCATK	GCCACGCTTCTATCCGAAA (F) AGAGCTGAAAGCCCAACAGG (R)	483
mCALCR	GCAGGCACTGCTAAGGAGA (F) TCCGCCTTTTCACTCTGGAC (R)	321
mIntegrin β 3	CTCCCTTCTCCCTCCCCTC (F) GCCTCACTGACTGGGAACTC (R)	346
mAR	TGAGTACCGCATGCACAAGT (F) TCAGGAAAGTCCACGCTCAC (R)	366
mOsteoactivin	GTCCTGATCTCCATCGGCTG (F) AACAAAGTTCCCAGCCACA (R)	302
mM-CSF	AAAAGCCACTCTTGGGGCAT (F) TGGTGAGGGGTCATAGAATCC (R)	414
mRANKL	CCGAGACTACGGCAAGTACC (F) CCACATCCAACCATGAGCCT (R)	446

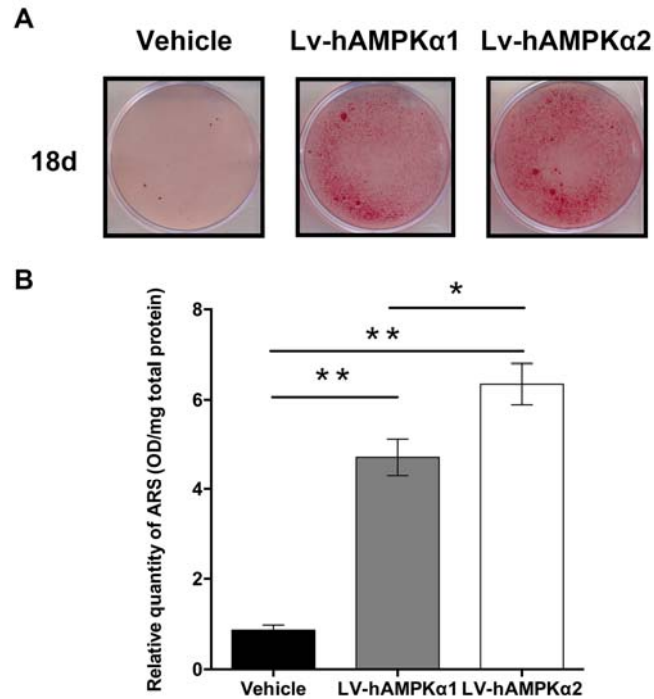
Gene	Primer sequences (5'-3')	Product length (bp)
mMMP24	CACCGGTGTGTTGGATCAGA (F) ATGGGCTAGGAATCCCCCTT (R)	367
mPhospho1	ATGAGCGGGTGTTCAG (F) ATCGAAGTCGAAGGTGAGGAG (R)	102
mOPG	CCTTGCCCTGACCACTCTTAT (F) CACACACTCGGTTGTGGGT (R)	127
m β -actin	GGCTGTATTCCCCTCCATCG (F) CCAGTTGGTAACAATGCCATGT (R)	154

h: human, m: mouse, F: forward, R: reverse



Supplementary figure 1

Supplementary figure 1: MC3T3-E1 cells infected with LV-hAMPK α 1 or LV-hAMPK α 2 were treated with BMP2 for 7 days. The protein expression of 36 markers of bone metabolisms was evaluated using an antibody array, with the relative expression level represented by fluorescent signal intensity.



Supplementary figure 2

Supplementary figure 2. Osteogenesis in MC3T3-E1 cells expressing AMPK α 1 and α 2. Osteogenesis was induced with an osteogenic medium (100nM dexamethasone, 50 μ g/mL ascorbic acid and 10mM sodium β -glycerol-phosphate) for 18 days. **(A)** Calcium deposition was assessed by Alizarin Red staining. **(B)** Calcium deposition activity was assayed using colorimetrically quantitative analysis at 590 nm. Data are shown as mean \pm SD.

*P < 0.05, **P < 0.01.