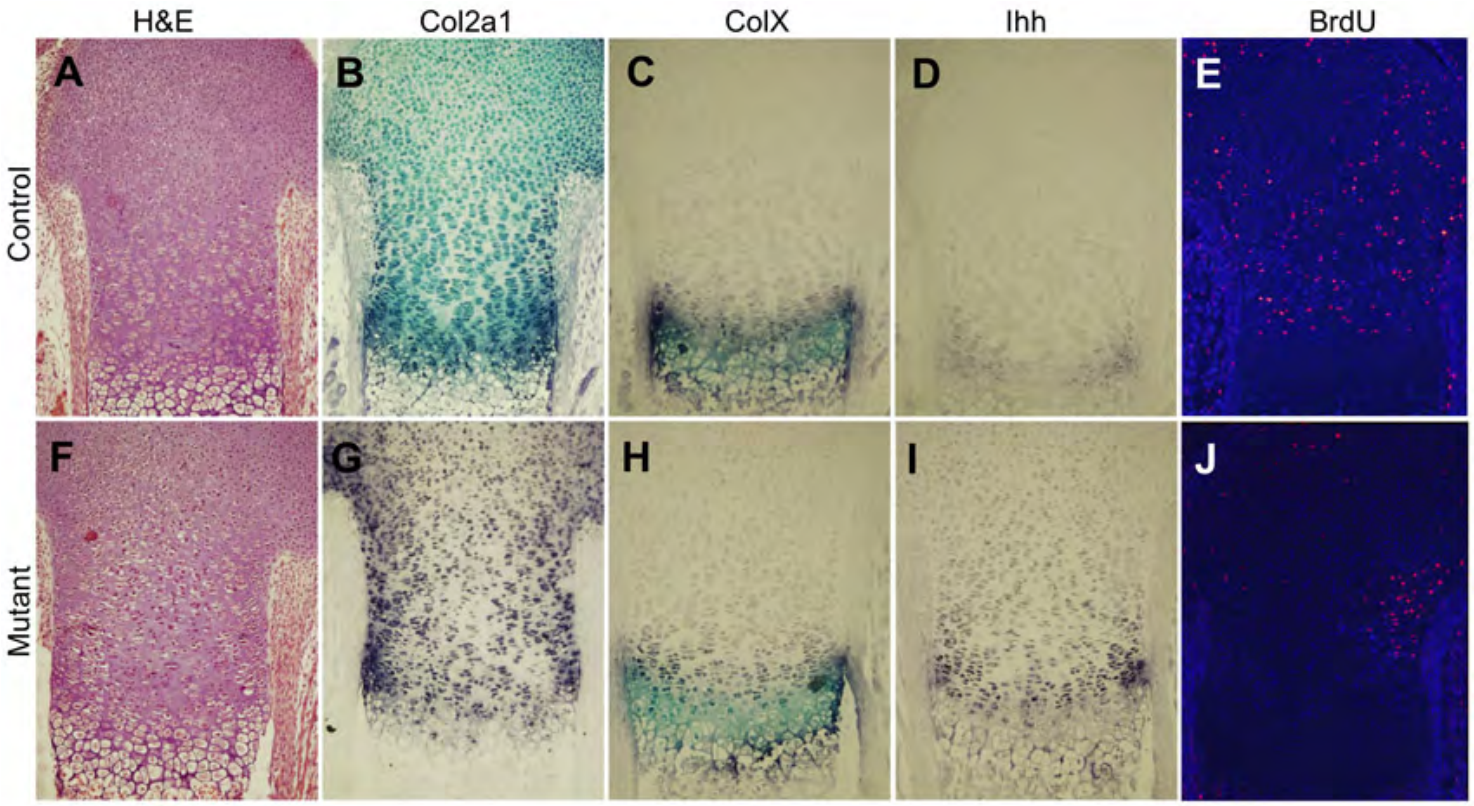

Fig. S1. Analysis of cell differentiation and proliferation in *Hif1a*-deficient growth plate. (A-D,**F-I)** Histological analysis and in situ hybridization of growth plate markers in control (A-D) and *Hif1a*-deficient growth plates (F-I) 48 hours post tamoxifen injection demonstrate that cells in the mutant growth plate are still viable and express typical markers. **(E**,**J)** BrdU staining (red) of control (E) and *Hif1a*-deficient (J) growth plate sections indicate a substantial reduction in cell proliferation at the hypoxic central region upon *Hif1a* inactivation. Nuclei are stained with DAPI (blue).

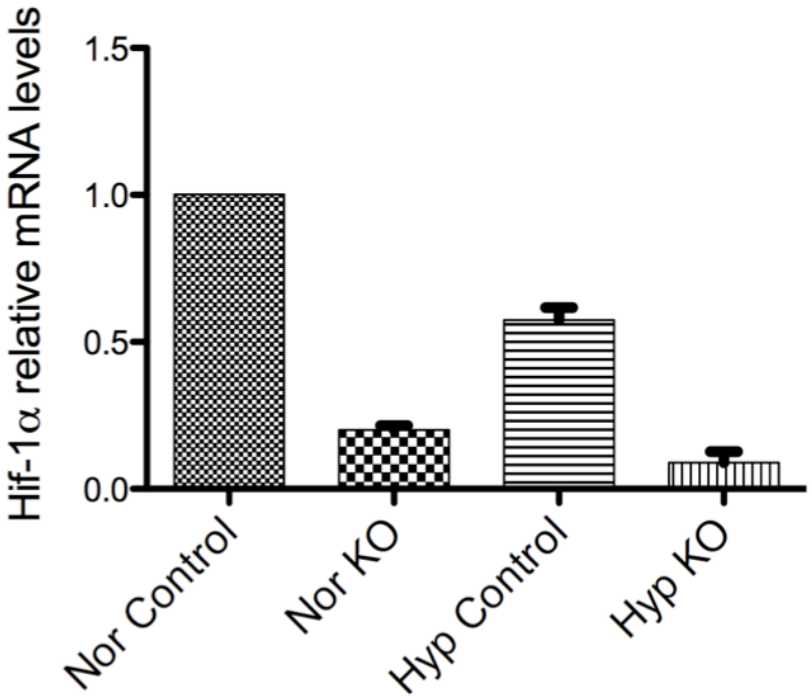

Fig. S2. *Hif1a* mRNA levels. This figure relates to Fig. 3G and Fig. 6A. qRT-PCR for *Hif1a* demonstrates an ~80% reduction in gene expression upon *Hif1a* knockout (KO), when compared with the control, both under normoxia and under hypoxia (n=3, P<0.05 in both cases, data normalized to *Tbp* and 18S rRNA and represented as mean±s.e.m.

Gene	Site	Sequence	Start	End	Strand
Pdk1	A	acttcaca**CGTG**gcagg	–754	–738	+
	B	tcctgcca**CGTG**tgaag	–753	–737	–
	C	aagacaga**CGTG**atttt	–670	–654	+
	D	aacaggga**CGTG**cgact	+442	+458	+
	E	tagtcgc**ACGT**ccctgt	+443	+459	–
	F	tccgcgca**CGTG**cgtag	+531	+547	+
	G	cctacgca**CGTG**cgcgg	+532	+548	–
P4ha1	A	tagccta**ACGT**gacaga	–3167	–3151	–
	B	cctcgcta**CGTG**cgctc	–21	–5	–
P4ha2	A	atcgcata**CGTG**cagcg	–85	–69	+
	B	accacaga**CGTG**atact	+888	+904	–
P4hb	A	cttccac**ACGT**ctggaa	–288	–272	+
	B	attccaga**CGTG**tggaa	–289	–273	–
	C	ccgtcgaa**CGTG**gcagt	–378	–362	+
	D	ccgagaaa**CGTG**cccgc	–645	–629	–

Table S1. Potential binding sites of HIF1α on the gene sequences of *Pdk1* and cP4H subunits. The sequences and positions of HIF1α potential binding sites identified on *Pdk1* (mouse chr2:71706329-71712328), *P4ha1* (mouse chr10:58781044-58787043), *P4ha2* (mouse chr11:53909426-53915426) and *P4hb* (mouse chr11:120433251-120439250) genes, and analyzed by ChIP in Fig. 5D and Fig. 6D (+1 is the transcription start site). Highlighted is the core consensus sequence (four nucleotides).

qRT-PCR primers		
Primer name	Forward	Reverse
Hif-1α	AGATCTCGGCGAAGCAAAGAGT	CGGCATCCAGAAGTTTTCTCACAC
Tbp	GCAGCCTCAGTACAGCAATCAACA	GGTGCAGTGGTCAGAGTTTGAGAA
18S rRNA	GTAACCCGTTGAACCCCATT	CCATCCAATCGGTAGTAGCG
Chop	TGTTGAAGATGAGCGGGTGGCA	GGACCAGGTTCTGCTTTCAGGTGT
BiP	GGGGACCACCTATTCCTGCGTC	ATACGACGGCGTGATGCGGT
Pdk1	GACTGTGAAGATGAGTGACCGGGG	CGTTTCAACACGAGGCCGGG
P4hα1	AGGACATGTCGGATGGCTTCATCT	TCTTGCAGCCGAAACAGAGCTT
P4hα2	AGGTGTTGGTGTTGGTGTTGCT	TGTACCAGGTCCTTCTCTGCGTAA
P4hβ	CAGATGAGCTGACGGCTGAGAAAA	CTTCAAAGTTCGCCCCAACCAGTA
ChIP primers		
Primer name	Forward	Reverse
Pdk1 site A-C	AACTTCACACGTGGCAGGATAGT	ACCCCACGAAAATCACGTCTGTCT
Pdk1 site D-G	CTGGAAGGCCGGGCACGTAA	AGACACCAGGTCCCCAAGCG
P4hα1 site A	GTGTCCCACCACGAGATGCCA	GCCAGGTGTAGCAGGCTCACAAT
P4hα1 site B	ACAGAGCGCACGTAGCGAGG	TGCGACTGGGCAGTAGAGGGA
P4hα2 site A	TGGTGCCGGTCCCACGC	CGAGCCACTGGAGCCTTCGG
P4hα2 site B	ATCACCCTGAGTGGCCGCAA	GTGGGGCCCTTGGACAGCTA
P4hβ site A-C	TCCCACGCCTTCCACACGTC	CCACTGCCACGTTCGACGGA
P4hβ site D	TCGGGGTCGGTGTTCTGTGC	TGGTGGACAGGAGCCTCGGA

Table S2. List of primers. The sequences of the primers used for the qRT-PCR assay and the in vivo ChIP assay are listed.