

**Supplemental Table 1. Alphabetical list of genes analyzed from cDNA microarray for this study**

Gene Name	Gene Name	Gene Name	Gene Name	Gene Name	Gene Name	Gene Name	Gene Name										
ACAN	CDH6	EFNA4	FGF9	¥\$↑	ID4	¥\$↑	KRT15	¥\$↓									
ACTG2	CDKN1A	EFNA5	FGFBP1	¥\$↑	IGF1	¥\$↑	LAMA1	¥\$↓									
ACTN4	¥\$↓	CDKN1B	EFNB1	FGFBP2	IGF1R	¥↑	LAMA2	¥\$↑									
ACVR1	¥\$↑	CDKN1C	¥\$↑	EFNB2	FGFBP3	IGF2	¥\$↑	LAMA4	¥\$↑								
ACVRL1	¥↓	CDKN2A	EFNB3	FGFR1	IGF2AS	LAMA5	¥\$↑	RARRES1	¥\$↑								
AEBP1	CDKN2B	EGF	FGFR1OP	IGF2BP1	¥↓	LAMC2	¥\$↓	RARRES2	¥\$↑								
AFF2	¥\$↑	CDKN2C	EGFR	¥\$↑	IGF2BP2	¥\$↑	LEF1	¥\$↓	RARRES3	¥\$↑							
AHSG	CDKN2D	EGR3	FGFR2	¥\$↑	IGF2BP3	¥↓	LEP	¥\$↓	REL	¥\$↑							
ALDH1A3	CDKN3	¥\$↓	ENAM	FGFR3	¥↑	IGF2R	¥\$↑	LEPR	¥\$↑	RELA	¥\$↓						
ALPL	CHI3L1	ENPP2	¥\$↑	FGFR4	IGFALS	LGALS3	¥\$↓	LEP	¥\$↓	RELB	¥\$↓						
ALX1	¥↓	cdn1	¥\$↑	EPHA1	FGFRL1	¥\$↑	IGFBP1	¥\$↓	LGALS3BP	¥\$↓	RGS12	¥\$↓					
AMBN	CNTNAP3	EPHA10	FGL2	¥\$↑	IGFBP2	LOXL4	¥\$↓	RUNX1	¥\$↑	THBS2	¥\$↑						
AMELY	COL10A1	EPHA2	¥\$↓	FLNC	¥\$↓	IGFBP3	LPPR4	¥\$↑	RUNX1T1	¥\$↑	THRA	¥\$↑					
ANXA5	COL11A1	EPHA3	¥\$↑	FLT1	IGFBP4	¥\$↑	LRP1	¥\$↑	RUNX2	¥\$↑	THRAP3	¥\$↑					
BGLAP	¥\$↓	COL12A1	¥\$↑	EPHA4	¥\$↑	FN1	¥\$↓	LUZP2	¥\$↑	RUNX3	¥\$↑	THRB	¥\$↑				
BGN	COL14A1	¥\$↑	EPHA5	FOXC1	¥\$↑	IGFBP5	¥\$↑	MCAM	S100A4	THRSP	¥\$↓						
BMP1	COL15A1	EPHA6	FOXE1	IGFBP6	¥\$↓	IGFBP7	¥\$↓	MINPP1	¥\$↓	SCARB1	TINAGL1	¥\$↓					
BMP10	COL1A1	¥\$↑	EPHA7	FOXF1	IGFBPL1	INSR	¥\$↑	MME	¥\$↑	SDC4	¥\$↓	TLR4	¥\$↓				
BMP15	COL1A2	¥\$↑	EPHA8	FOXM3	IRS1	¥↑	MMP10	SEMA3C	¥\$↑	SEMA3D	¥\$↑	TNF	¥\$↑				
BMP2	COL2A1	EPHB1	¥\$↓	FOXO1	¥\$↑	IRS2	¥↑	MMP2	SERPINH1	¥\$↓	SERPINH1	¥\$↓	TNFRSF11B	¥\$↑			
BMP2K	COL3A1	EPHB2	FOXO3	IRS4	¥\$↓	ITGA10	¥\$↓	MMP8	SFRP1	¥\$↓	SFRP1	¥\$↓	TOX	¥\$↑			
BMP3	COL4A1	EPHB3	FOXO3B	IRS4	¥\$↓	ITGA11	¥\$↑	MMP9	SFRP2	¥\$↓	SFRP2	¥\$↓	TUBB3	¥\$↓			
BMP4	COL4A2	EPHB4	FOXO4	¥\$↓	ITGA12	¥\$↓	ITGA1	¥\$↑	MSX1	¥\$↑	SFRP4	¥\$↑	TUFT1	¥\$↓			
BMP5	COL4A3	EPHB6	FZD1	¥\$↑	ITGA2	¥\$↓	ITGA2	¥\$↓	MSX2	¥\$↑	SFRP5	¥\$↑	TVST1	¥\$↑			
BMP6	¥\$↑	COL5A1	FAM38B	¥\$↑	FZD2	¥\$↓	ITGA2B	¥\$↓	MYOCD	SHC4	¥\$↓	SFRP5	¥\$↑	VCAM1	¥\$↓		
BMP7	COL5A2	FBN1	¥\$↑	FZD3	¥\$↑	ITGA3	¥\$↓	NCAM1	SLC7A2	¥\$↑	SHC4	¥\$↓	VDR	¥\$↓			
BMP8A	COL6A3	FBN2	¥\$↑	FZD4	¥\$↑	ITGA4	¥\$↓	NEDD9	SMAD1	¥\$↓	SLC7A2	¥\$↑	VEGFA	¥\$↑			
BMP8B	COMP	FBN3	FZD4	¥\$↑	ITGA5	¥\$↓	ITGA5	¥\$↓	NEFM	SMAD2	¥\$↑	SMAD1	¥\$↓	VEGFB	¥\$↑		
BMPER	¥\$↑	CSF2	FBXO32	¥\$↑	FZD5	¥\$↑	ITGA6	¥\$↓	NELL1	SMAD3	¥\$↓	SMAD2	¥\$↑	WFS12	¥\$↓		
BMPR1A	¥\$↑	CSF3	FGF1	¥\$↓	FZD6	¥\$↑	ITGA7	¥\$↓	NELL2	SMAD4	¥\$↑	SMAD3	¥\$↓	WNT1	¥\$↑		
BMPR1B	¥\$↑	CTNBN1	¥\$↑	FGF10	¥\$↑	FZD7	¥\$↓	ITGA8	NFIX	¥\$↑	SMAD4	¥\$↑	SMAD4	¥\$↑	WNT10A	¥\$↑	
BMPR2	¥\$↑	CTSK	¥\$↑	FGF11	¥\$↑	FZD8	¥\$↑	ITGA9	NFKB1	¥\$↓	SMAD5	¥\$↑	SMAD5	¥\$↑	WNT10B	¥\$↑	
CALCR	¥\$↓	CXCL12	FGF12	¥\$↑	FZD9	¥\$↑	ITGA8	NFKB2	¥\$↓	SMAD6	¥\$↑	SMAD6	¥\$↑	WNT11	¥\$↓		
CALCRL	¥\$↓	DKK1	¥\$↓	FGF13	¥\$↑	GCNT4	ITGAD	ITGAD	NLRP1	¥\$↑	SMAD7	¥\$↑	SMAD7	¥\$↑	WNT16	¥\$↓	
CAV2	¥\$↓	DKK2	¥\$↓	FGF14	¥\$↑	GDF10	ITGAE	ITGAE	OGN	¥\$↑	SMAD9	¥\$↑	SMAD9	¥\$↑	WNT2	¥\$↑	
CCNA1	DKK3	FGF16	¥\$↓	GFRA1	¥↑	ITGAL	¥↓	ITGAL	OXTR	¥\$↓	SNAI1	¥\$↑	SNAI1	¥\$↑	WNT2B	¥\$↑	
CCNA2	¥\$↓	DKK4	FGF17	GH1	ITGAM	pappa	¥\$↑	ITGAM	OXTR	¥\$↓	SNAI2	¥\$↑	SNAI2	¥\$↑	WNT3	¥\$↑	
CCNB1	¥\$↓	DLL1	FGF18	¥\$↑	GH2	ITGAV	¥\$↓	ITGAV	pappa2	¥\$↑	SNAI3	¥\$↑	SNAI3	¥\$↑	WNT3A	¥\$↑	
CCNB2	¥\$↓	DLX1	¥\$↓	FGF19	¥\$↑	GHDC	¥\$↑	ITGAV	SP7	¥\$↑	SOX9	¥\$↑	SOX9	¥\$↑	WNT4	¥\$↑	
CCNB3	¥\$↓	DLX2	¥\$↓	FGF2	¥\$↑	GHITM	ITGB1	¥\$↓	PARD6A	SP7	¥\$↑	SP7	¥\$↑	SP7	¥\$↑	WNT5A	¥\$↑
CCNC	¥\$↓	DLX3	FGF20	GHR	¥\$↑	GHR	ITGB2	¥\$↓	PDE1A	¥\$↑	SPARC	¥\$↑	SPARC	¥\$↑	WNT5B	¥\$↑	
CCND1	¥\$↓	DLX4	FGF21	¥\$↓	GHRH	ITGB3	¥\$↓	ITGB3	PDE1B	¥\$↑	SPP1	¥\$↑	SPP1	¥\$↑	WNT6	¥\$↑	
CCND2	¥\$↑	DLX5	¥\$↑	FGF22	GHRRH	ITGB3BP	PDE1C	¥\$↑	PDE1C	¥\$↑	STATH	¥\$↑	STATH	¥\$↑	WNT7A	¥\$↑	
CCND3	¥\$↓	DLX6	¥\$↑	FGF23	GHRL	ITGB4	PDE8B	¥\$↑	PDE8B	¥\$↑	SULT1E1	¥\$↑	SULT1E1	¥\$↑	WNT7B	¥\$↑	
CCNE1	¥\$↓	DMP1	FGF3	GLI3	¥\$↑	GLI3	ITGB5	¥\$↑	PDGFA	¥\$↑	TBX18	¥\$↑	TBX18	¥\$↑	WNT8A	¥\$↓	
CCNE2	¥\$↓	DSG2	FGF4	GLIS3	¥\$↑	GLIS3	ITGB6	¥\$↑	PDGFC	¥\$↓	TCF7	¥\$↓	TCF7	¥\$↓	WNT8B	¥\$↓	
CD36	DSPP	FGF5	¥\$↓	GREM2	¥\$↑	GREM2	ITGB7	¥\$↑	PENK	¥\$↑	TFIP11	¥\$↑	TFIP11	¥\$↑	WNT9A	¥\$↑	
CD44	¥\$↓	EFNA1	FGF6	GSK3B	¥\$↑	GSK3B	ITGB8	¥\$↑	PHEX	¥\$↓	TGFA	¥\$↑	TGFA	¥\$↑	WNT9B	¥\$↑	
CDC2	¥\$↓	EFNA2	FGF7	¥\$↑	IBSP	ITGBL1	¥\$↑	ITGB8	PLA2G5	¥\$↓	TGFB1	¥\$↓	TGFB1	¥\$↓	WWTR1	¥\$↑	
CDH11	EFNA3	FGF8	ICAM1	¥\$↓	JAG1	PTTG1IP	¥\$↓	ITGBL1	PRRX2	¥\$↓	TGFB111	¥\$↓	TGFB111	¥\$↓	ZFH4	¥\$↑	
								JAG1	PTTG1IP	¥\$↓	TGFB2	¥\$↓	TGFB2	¥\$↓			

Alphabetical list of 399 genes of interest chosen a priori for their role in osteoblast development and bone biology. (¥) indicates significant difference in expression levels between 23 cases with the highest levels of *IGF1* expression and 50 unaffected controls. (¥) indicates significant difference in expression levels between 23 cases with the highest levels of *IGF1* expression and 188 affected control cases (e.g. cases with craniosynostosis with low *IGF1* expression). (↑) indicates a the gene is positively correlated with *IGF1* and (↓) indicates that a gene is inversely correlated with *IGF1* for the group(s) it is significant in.