

Genes down-regulated in C2C12-FOXC2 (PM)

GO Term	P Value	Genes
GO:0030239~myofibril assembly	1.15E-05	TNNT2, XIRP1, NEB, ACTA1, TTN
GO:0031032~actomyosin structure organization	3.62E-05	TNNT2, XIRP1, NEB, ACTA1, TTN
GO:0014706~striated muscle tissue development	5.29E-05	TNNT2, MYOD1, XIRP1, ACTA1, PDLIM3, VGLL2, TTN, TNNI1
GO:0007517~muscle organ development	6.04E-05	TNNT2, MYOD1, DES, XIRP1, ACTA1, PDLIM3, VGLL2, TTN, TNNI1
GO:0045214~sarcomere organization	6.87E-05	TNNT2, XIRP1, NEB, TTN
GO:0060537~muscle tissue development	8.17E-05	TNNT2, MYOD1, XIRP1, ACTA1, PDLIM3, VGLL2, TTN, TNNI1
GO:0010927~cellular component assembly involved in morphogenesis	1.58E-04	TNNT2, XIRP1, NEB, ACTA1, TTN
GO:0007010~cytoskeleton organization	1.95E-04	TNNT2, TPPP3, SGCG, XIRP1, NEB, ACTA1, MTAP2, PDLIM3, TTN, NEFL, NEFM
GO:0051146~striated muscle cell differentiation	5.95E-04	TNNT2, MYOD1, XIRP1, NEB, ACTA1, TTN
GO:0055002~striated muscle cell development	7.63E-04	TNNT2, XIRP1, NEB, ACTA1, TTN

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GO Term	P Value	Genes
GO:0006955~immune response	2.36E-09	ENPP1, C3, ENPP2, CCL9, C1S, OAS2, CXCL12, CD74, H60B, C1RB, OASL2, TAP1, VNN1, LBP, MR1, SPON2, MPA2L, DHX58, H2-K1, GBP6, IL1RL1, IL1RL2, IL1RN, COLEC12, TINAGL1, DDX58, GM5077, IRF7, GBP3
GO:0030198~extracellular matrix organization	6.61E-07	RECK, A930038C07RIK, SMOC2, AGT, FBLN5, TGFBI, PDGFRA, POSTN, ADAMTS2, ABI3BP, EMILIN1, DPT
GO:0007155~cell adhesion	1.25E-06	POSTN, ITGBL1, LGALS3BP, FAT4, AGT, TGFBI, COL6A2, COL6A1, VNN1, ROBO2, SPON2, DPT, PCDHB9, HAPLN4, SVEP1, ADAM23, THY1, EMILIN1, PCDH18, LAMA4, PGM5, SNED1, FBLN5, CLDN1, PERP, MFAP4, AOC3
GO:0043062~extracellular structure organization	5.19E-06	RECK, POSTN, ABI3BP, EMILIN1, SMOC2, A930038C07RIK, FBLN5, AGT, TGFBI, PDGFRA, AGRN, ADAMTS2, DPT
GO:0006952~defense response	3.87E-05	H2-K1, KNG1, C3, IL1RL1, IL1RL2, EPHX2, IFI47, C1S, CHI3L4, CD74, DDX58, S1PR3, C1RB, GM5077, TAP1, CLEC2D, PLA2G7, VNN1, LBP, IGFBP4, DHX58
GO:0045087~innate immune response	5.69E-05	DDX58, GM5077, C1RB, IL1RL1, C3, IL1RL2, VNN1, C1S, LBP, DHX58
GO:0060348~bone development	1.22E-04	BMP4 , FGFR2, CHRDL1, IGF1, PTN, IGF2, COL1A1, PAPSS2, MMP13, MMP2
GO:0048729~tissue morphogenesis	1.29E-04	BMP4 , FGFR2, EGFR, FGF7, FST, TCFAP2A, IGF1, CYP7B1, RGMA, WNT4 , AGT, TGFBR3, FOXD1, TWIST1
GO:0030574~collagen catabolic process	1.33E-04	MMP19, MMP16, ADAMTS2, MMP13, MMP2
GO:0001763~morphogenesis of a branching structure	1.89E-04	BMP4 , FGFR2, WNT4 , EPHA7, FGF7, AGT, TGM2, IGF1, FOXD1, CXCL12
GO:0001944~vasculature development	2.11E-04	BMP4 , RECK, FGFR2, MMP19, MMP2, CXCL12, THY1, LAMA4, AGT, TGM2, TGFBR3, COL1A1, PPAP2B, FIGF
GO:0001501~skeletal system development	2.17E-04	BMP4 , FGFR2, TCFAP2A, IGF1, IGF2, DLK1, MMP2, MMP13, OSR2, CHRDL1, HOXD8, PDGFRA, PTN, COL1A1, PAPSS2
GO:0001503~ossification	3.12E-04	BMP4, FGFR2, CHRDL1, IGF1, PTN, IGF2, COL1A1, MMP13, MMP2

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GO Term	P Value	Genes
GO:0003012~muscle system process	3.86E-13	MYH1, MYH7, ACTN3, TTN, TRIM63, TPM2, TRIM72, MYH8, CACNA1S, TNNT2, MYOM2, MYL6B, RYR1, MYOM1
GO:0006936~muscle contraction	2.18E-12	MYH1, MYH7, ACTN3, TTN, TRIM63, TPM2, MYH8, CACNA1S, TNNT2, MYOM2, MYL6B, RYR1, MYOM1
GO:0031032~actomyosin structure organization	1.88E-10	TNNT2, MURC, ACTC1, XIRP1, NEB, ACTA1, LIMCH1, TTN, TMOD1
GO:0030239~myofibril assembly	8.59E-10	TNNT2, MURC, ACTC1, XIRP1, NEB, ACTA1, TTN, TMOD1
GO:0007517~muscle organ development	1.14E-09	MEF2C, ACTC1, ACTA1, PDLIM3, MYL6B, MYOG, UNC45B, TRIM72, TTN, CACNA1S, CSRP3, TNNI1, TNNT2, MURC, XIRP1, MYL6B, MYOG
GO:0014706~striated muscle tissue development	1.63E-09	MEF2C, ACTC1, ACTA1, PDLIM3, MYL6B, MYOG, TTN, CSRP3, CACNA1S, TNNI1, TNNT2, MURC, XIRP1, MYL6B, MYOG
GO:0060537~muscle tissue development	3.80E-09	MEF2C, ACTC1, ACTA1, PDLIM3, MYL6B, MYOG, TTN, CSRP3, CACNA1S, TNNI1, TNNT2, MURC, XIRP1, MYL6B, MYOG
GO:0010927~cellular component assembly involved in morphogenesis	4.73E-09	TNNT2, MURC, ACTC1, XIRP1, NEB, ACTA1, NEURL1A, TTN, TMOD1
GO:0055002~striated muscle cell development	7.49E-09	TNNT2, MURC, ACTC1, XIRP1, NEB, ACTA1, MYOG, TTN, CACNA1S, TMOD1
GO:0055001~muscle cell development	2.28E-08	TNNT2, MURC, ACTC1, XIRP1, NEB, ACTA1, MYOG, TTN, CACNA1S, TMOD1
GO:0030029~actin filament-based process	8.51E-08	ACTC1, ACTA1, PDLIM3, TTN, DAAM2, TNNT2, MURC, XIRP1, NRAP, SORBS1, NEB, MYL6B, LIMCH1, TMOD1
GO:0007519~skeletal muscle tissue development	1.51E-04	MEF2C, ACTA1, MYL6B, PDLIM3, MYL6B, MYOG, CACNA1S
GO:0032989~cellular component morphogenesis	1.58E-04	ABLIM1, ACTC1, ACTA1, PKHD1, HGF, TTN, TNNT2, MURC, XIRP1, NEB, CLIC5, NEURL1A, DCLK1, TMOD1
GO:0060538~skeletal muscle organ development	1.76E-04	MEF2C, ACTA1, MYL6B, PDLIM3, MYL6B, MYOG, CACNA1S
GO:0045214~sarcomere organization	2.12E-04	TNNT2, XIRP1, NEB, TTN

Genes up-regulated in C2C12-FOXC2 (D3)

GO Term	P Value	Genes
GO:0007049~cell cycle	1.76E-39	GAS2L3, PRC1, E2F7, DBF4, KNTC1, AURKA, AURKB, PTTG1, CDT1, FAM83D, CCNE2, CDCA8, OIP5, MTBP, CDCA5, CCNA2, ASPM, CDCA3, CDC6, KIF11, SGOL2, LIG1, SGOL1, CCNF, TPX2, 463243411RIK, NUSAP1, ESPL1, MCM2, HMGA2, MCM3, TACC3, UBE2C, ESCO2, AHR, RAD51, UHRF1, CCND1, MAD2L1, SPAG5, BUB1B, CKS1B, NEK2, ANLN, CHEK2, CEP55, C79407, GM8956, SPC25, NCAPH, NCAPG2, F630043A04RIK, BUB1, FBXO5, ZWILCH, LFNG, HELLS, TRIP13, ERCC6L, EXO1, CKAP2, MKI67, DLGAP5, GMNN, PSRC1, KIF18A, NUF2, CENPF, BIRC5, CDC20, CENPE, CDC25C, CDKN3, RACGAP1, SMC2, 2610039C10RIK, CCNB1, CCNB2, RGS2, PLK1, RASSF2, KIF20B, CKS2, CENPV, CIT, GM10124, CHAF1B
GO:0000279~M phase	1.04E-36	KNTC1, PTTG1, AURKB, FAM83D, CDCA8, OIP5, CDCA5, CCNA2, ASPM, CDCA3, CDC6, KIF11, SGOL2, SGOL1, CCNF, TPX2, NUSAP1, ESPL1, UBE2C, TACC3, HMGA2, RAD51, MAD2L1, SPAG5, BUB1B, NEK2, ANLN, CEP55, C79407, GM8956, SPC25, NCAPH, NCAPG2, F630043A04RIK, BUB1, FBXO5, ZWILCH, LFNG, HELLS, TRIP13, ERCC6L, EXO1, MKI67, DLGAP5, KIF18A, NUF2, CENPF, CDC20, CENPE, BIRC5, CDC25C, SMC2, 2610039C10RIK, CCNB1, CCNB2, PLK1, CENPV, KIF20B, CKS2, CIT
GO:0022403~cell cycle phase	4.76E-36	DBF4, KNTC1, PTTG1, AURKB, FAM83D, CDCA8, OIP5, MTBP, CDCA5, CCNA2, ASPM, CDCA3, CDC6, KIF11, SGOL2, SGOL1, CCNF, TPX2, NUSAP1, ESPL1, HMGA2, UBE2C, TACC3, RAD51, CCND1, MAD2L1, SPAG5, BUB1B, NEK2, ANLN, CEP55, C79407, GM8956, SPC25, NCAPH, NCAPG2, F630043A04RIK, BUB1, FBXO5, ZWILCH, LFNG, HELLS, TRIP13, ERCC6L, EXO1, MKI67, DLGAP5, KIF18A, NUF2, CENPF, CDC20, CENPE, BIRC5, CDC25C, SMC2, 2610039C10RIK, CCNB1, CCNB2, PLK1, CENPV, KIF20B, CKS2, CIT
GO:0022402~cell cycle process	3.28E-35	GAS2L3, DBF4, KNTC1, AURKB, PTTG1, FAM83D, CDCA8, OIP5, MTBP, CDCA5, CCNA2, ASPM, CDCA3, CDC6, KIF11, SGOL2, SGOL1, CCNF, 463243411RIK, TPX2, NUSAP1, ESPL1, HMGA2, UBE2C, TACC3, RAD51, CCND1, MAD2L1, SPAG5, BUB1B, NEK2, ANLN, CEP55, C79407, GM8956, SPC25, NCAPH, NCAPG2, F630043A04RIK, BUB1, FBXO5, ZWILCH, LFNG, HELLS, TRIP13, ERCC6L, EXO1, MKI67, DLGAP5, KIF18A, NUF2, CENPF, CDC20, CENPE, BIRC5, CDKN3, RACGAP1, CDC25C, SMC2, 2610039C10RIK, CCNB1, CCNB2, PLK1, KIF20B, CKS2, CENPV, CIT
GO:0051301~cell division	9.40E-35	PRC1, KNTC1, PTTG1, AURKB, CCNE2, FAM83D, CDCA8, CDCA7, OIP5, CDCA5, CCNA2, TOP2A, ASPM, CDCA3, CDC6, KIF11, SGOL2, LIG1, SGOL1, CCNF, NUSAP1, HMGA2, UBE2C, MCM5, CCND1, MAD2L1, SPAG5, BUB1B, CKS1B, NEK2, ANLN, CEP55, C79407, GM8956, SPC25, NCAPH, NCAPG2, F630043A04RIK, BUB1, FBXO5, ZWILCH, HELLS, ERCC6L, NUF2, CDC20, CENPE, BIRC5, RACGAP1, CDC25C, SMC2, 2610039C10RIK, CCNB1, CCNB2, PLK1, CENPV, KIF20B, CKS2, CIT, GM10124
GO:0006260~DNA replication	4.83E-08	CDC6, GLRB, DTL, DBF4, LIG1, POLE, MCM2, MCM3, MCM4, MCM5, RAD51, TK1, CDT1, CCNE2, RFC4, POLE2, CTGF, PRIM2, CHAF1B
GO:0006270~DNA replication initiation	7.26E-05	CCNE2, MCM2, MCM3, MCM4, MCM5

Mouse cDNA primer
sequences

Gene	5'	3'
MyoD	ATGATGACCCGTGTTTCGACT	CACCGCAGTAGGGAAGTGT
Myogenin	CATCCAGTACATTGAGCGCCTA	GAGCAAATGATCTCCTGGGTTG
Myosin Heavy Chain	AAGTGACTGTGAAAACAGAAGCA	GCAGCCATTTGTAAGGGTTGAC
Wnt4	AAGAGGAGACGTGCGAGAAAC	GTCCCTTGTGTCACCACCTT
Bmp4	ATCTGGTCTCCGTCCCTGATGGG	TCTTGCTAGGCTGCGGACGG
Foxc2	AACCCAACAGCAAACCTTTCCC	GCGTAGCTCGATAGGGCAG
Runx2	AACGATCTGAGATTTGTGGGC	CCTGCGTGGGATTTCTTGTT
Osterix	AGCGACCACTTGAGCAAACAT	GCGGCTGATTGGCTTCTTCT
Osteocalcin	CTGACCTCACAGATCCCAAGC	TGGTCTGATAGCTCGTCACAAG

Human cDNA primer
sequences

Gene	5'	3'
FOXC2	CCTCCTGGTATCTCAACCACA	GGTCGAGTTCTCAATCCCA

Mouse Wnt4 promoter region	5'	3'
Set 1	CCTGGCAACCTGAGTTTGAT	ACTTTTGGTGCTGGGAATTG
Set 2	CCCGGAACAGAATGGTACAC	ACTTTTGGTGCTGGGAATTG