

Riggs Supplemental Table ST5. Note that gene ontology (GO) categories overlapped (OVRLP), but the specific genes in those categories in IPS and OF were sometimes distinct

IPS GO	# IPS genes	IPSC Genes in category	IPS GDP	OF GO	# OF genes	OF Genes in category	OF GDP	OVRLP GO	# IPS genes	IPSC Genes in category	IPS GDP	# OF genes	OF Genes in category	OF GDP	# shared genes	IPSC/OF shared Genes in category	SHRDGDP
positive regulation of transcription	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	1.50E-04	muscle protein	19	MYL6, ACTC1, ACTA1, TNNC2, ACTA2, MYH3, MYL1, MYLFP, TPM2, MYH8, TNN1, TPM4, MYL8, TNM2, TNNI3, TNN11, MYBPH, CASQ2, MB	1.28E-20	skeletal system development	7	OSR2, TGFBF1, EDN1, PRRX1, DLK1, SOX9, GLI2	3.44E-03	11	IBSP, WNT5A, CTGF, TBX4, CYTL1, FOXC2, SP7, COL2A1, MYOG, GJA5, TGF2	1.45E-02	11	IBSP, WNT5A, CTGF, TBX4, CYTL1, FOXC2, SP7, COL2A1, MYOG, GJA5, TGF2	1.45E-02
positive regulation of gene expression	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	1.86E-04	contractile fiber	18	CDKSR1, ACTC1, ACTA1, TCAP, CRYPB, ACTA2, MYH3, ANKRD2, PDLM3, ACTN1, ACTN2, ACTN3, TPM2, TTN, MYH8, CSRP3, ITGB1BP2, ATP2A1	1.50E-13	blood vessel development	6	TGFBF1, EDN1, PRRX1, MEIS1, SRF, WT1	8.41E-03	10	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, GJA5, TGF2	1.50E-02	10	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, GJA5, TGF2	1.50E-02
positive regulation of cell differentiation	7	LPL, ADAMTS9, ETS1, GATA6, JAG1, GLI2, SRF	2.78E-04	muscle organ development	22	MYL6, MYO11, ACTC1, ACTA1, CRYPB, TNC, PDLM3, RARG, MYLFP, FKBP1A, TPM2, TGNL2, TTN, CSRP3, ITGB1, TNN11, TGFB2, DNER, VGLL2, FOXC2, MYOG, CHRNA1	4.50E-13	vasculature development	6	TGFBF1, EDN1, PRRX1, MEIS1, SRF, WT1	9.28E-03	10	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, GJA5, TGF2	1.72E-02	10	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, GJA5, TGF2	1.72E-02
positive regulation of nitrogen compound metabolic process	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	3.40E-04	striated muscle tissue development	19	MYL6, MYO11, ACTC1, ACTA1, TNC, PDLM3, RARG, MYLFP, FKBP1A, TTN, CSRP3, ITGB1, TNN11, TGFB2, DNER, VGLL2, FOXC2, MYOG, CHRNA1	1.15E-12	heart development	7	SMARCD3, GATA6, TGFBF1, EDN1, SOX9, GLI2, SRF	9.98E-04	15	ACTC1, ALPK3, TCAP, PDLM3, COL2A1, FKBP1A, TTN, GJA5, ITGB1, CSRP3, TNN11, TGFB2, NPPB, FOXC2, MB	1.12E-05	15	ACTC1, ALPK3, TCAP, PDLM3, COL2A1, FKBP1A, TTN, GJA5, ITGB1, CSRP3, TNN11, TGFB2, NPPB, FOXC2, MB	1.12E-05
negative regulation of cellular biosynthetic process	10	EGR1, EDN1, ZFP238, PRRX1, RBM9, SOX9, GLI2, PKA, WT1, TWIST2	3.44E-04	muscle tissue development	19	MYL6, MYO11, ACTC1, ACTA1, TNC, PDLM3, RARG, MYLFP, FKBP1A, TTN, CSRP3, ITGB1, TNN11, TGFB2, DNER, VGLL2, FOXC2, MYOG, CHRNA1	3.81E-12	positive regulation of macromolecule biosynthetic process	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	3.61E-04	15	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, C1QTNF2, VGLL2, FOXC2, MYOG, SERTAD1	3.97E-02	15	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, C1QTNF2, VGLL2, FOXC2, MYOG, SERTAD1	3.97E-02
positive regulation of macromolecule metabolic process	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	3.63E-04	cytoskeleton	44	MYL6, LOR, NDN, MYL1, AKAP12, PDLM3, TTN, TPM2, TPM4, GTSF1, DSTN, MYL9, PFIN1, BLOC1L2, DYLL1, MYBPH, PPP2C8, MSN, CAP1, TUBA1A, LMO3, EMO, NEFM, ACTB, NES, ACTC1, ACTA1, ACTA2, MYH3, MYLFP, ACTN1, ACTN2, TMSB10, ACTN3, PALLD, CSRP3, MYH8, RFXSN, LASP1, NME1, SH3BP1, WDR1, TGFB11, MAPRE1	6.24E-08	positive regulation of gene expression	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	1.86E-04	14	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, VGLL2, FOXC2, MYOG, SERTAD1	4.39E-02	14	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, VGLL2, FOXC2, MYOG, SERTAD1	4.39E-02
negative regulation of biosynthetic process	10	EGR1, EDN1, ZFP238, PRRX1, RBM9, SOX9, GLI2, PKA, WT1, TWIST2	3.68E-04	skeletal muscle tissue development	11	MYL6, MYO11, ACTA1, DNER, TNC, RARG, PDLM3, MYLFP, VGLL2, MYOG, CHRNA1	1.67E-07	positive regulation of transcription	11	EGR1, ATF4, ETS1, SMARCD3, GATA6, EBF3, SOX9, SMARCA1, GLI2, SRF, WT1	1.50E-04	14	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, VGLL2, FOXC2, MYOG, SERTAD1	3.68E-02	14	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, FOS, INHBA, GATA3, VGLL2, FOXC2, MYOG, SERTAD1	3.68E-02
epithelium development	8	AGR16, GPC3, GATA6, JAG1, FZD2, SOX9, GLI2, WT1	4.77E-04	skeletal muscle organ development	11	MYL6, MYO11, ACTA1, DNER, TNC, RARG, PDLM3, MYLFP, VGLL2, MYOG, CHRNA1	2.17E-07	positive regulation of transcription from RNA polymerase II promoter	8	EGR1, ATF4, ETS1, GATA6, SOX9, GLI2, SRF, WT1	2.40E-03	13	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, INHBA, FOS, GATA3, VGLL2, FOXC2, MYOG	1.09E-02	13	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, INHBA, FOS, GATA3, VGLL2, FOXC2, MYOG	1.09E-02
positive regulation of developmental process	7	LPL, ADAMTS9, ETS1, GATA6, JAG1, GLI2, SRF	8.06E-04	striated muscle cell differentiation	11	MYO11, ACTC1, TCAP, ACTA1, DNER, TNC, MYOG, TTN, CAPN2, CHRNA1, ITGB1	1.25E-06	blood vessel morphogenesis	6	TGFBF1, EDN1, PRRX1, MEIS1, SRF, WT1	3.51E-03	9	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, TGF2	1.28E-02	9	RTN4, EMCN, HEY1, CTGF, ITGAV, BAX, TBX4, FOXC2, TGF2	1.28E-02
heart development	7	SMARCD3, GATA6, TGFBF1, EDN1, SOX9, GLI2, SRF	9.98E-04	striated muscle cell development	9	ACTC1, TCAP, ACTA1, DNER, TNC, MYOG, TTN, CHRNA1, ITGB1	1.79E-06	positive regulation of RNA metabolic process	9	EGR1, ATF4, ETS1, GATA6, SOX9, SMARCA1, GLI2, SRF, WT1	1.36E-03	13	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, INHBA, FOS, GATA3, VGLL2, FOXC2, MYOG	3.25E-02	13	MYO11, EGR2, SOX11, RARG, CYTL1, MED6, HES1, INHBA, FOS, GATA3, VGLL2, FOXC2, MYOG	3.25E-02
skeletal system development	7	OSR2, TGFBF1, EDN1, PRRX1, DLK1, SOX9, GLI2	3.44E-03	muscle cell differentiation	12	MYO11, ACTC1, TCAP, ACTA1, LGALS1, DNER, TNC, MYOG, TTN, CAPN2, CHRNA1, ITGB1	2.20E-06	skeletal system development				6	PDLM7, TGF2, FHL2, IGF2, HOXD10, IGFBP5	5.75E-04	6	PDLM7, TGF2, FHL2, IGF2, HOXD10, IGFBP5	5.75E-04
blood vessel morphogenesis	6	TGFBF1, EDN1, PRRX1, MEIS1, SRF, WT1	3.51E-03	myosin complex	8	MYL6, MYH3, MYL1, MYBPH, MYLFP, TTN, MYH8, MYL9	5.39E-05	ossification				4	PDLM7, FHL2, IGF2, IGFBP5	2.12E-03	4	PDLM7, FHL2, IGF2, IGFBP5	2.12E-03

morphogenesis of a branching structure	5	GPC3, EDN1, SOX9, GLI2, SRF	3.92E-03	regulation of cell growth	9	RTN4, E24, NDN, CTGF, TRO, ESM1, DCUN1D3, SERTAD1, TGFB2	9.62E-05	bone development	4	POLM7, FHL2, IGF2, IGFBP5	2.88E-03
chordate embryonic development	8	OSR2, GATA6, TGFB1, EDN1, PRRX1, DLK1, GLI2, SRF	5.83E-03	tissue morphogenesis	13	WNT5A, ACTC1, TNC, FST, TBX4, FZD3, FKBP1A, TNF1, TGFB2, PBN1, CD44, FOXC2, TGFB11	3.78E-04	osteoblast differentiation	3	FHL2, IGF2, IGFBP5	5.77E-03
regulation of cell proliferation	9	IRS2, OSR2, GPC3, EDN1, PRRX1, FGF21, SOX9, GLI2, H19	6.28E-03	regulation of apoptosis	20	IRAK2, CDKSR1, CD3G, COL2A1, INHA, PMAIP1, BCL2L1, CIAPIN1, HRAS1, TGFB2, E24, CDKN1A, BAX, PPP2CB, FOXC2, NGRAP1, DCUN1D3, PHLDA3, ERCC1, TRAF4	1.13E-03	sarcolemma	3	CACNA2D1, DES, TGFB3	6.78E-03
urogenital system development	5	GPC3, TGFB1, SOX9, GLI2, WT1	6.78E-03	regulation of programmed cell death	20	IRAK2, CDKSR1, CD3G, COL2A1, INHA, PMAIP1, BCL2L1, CIAPIN1, HRAS1, TGFB2, E24, CDKN1A, BAX, PPP2CB, FOXC2, NGRAP1, DCUN1D3, PHLDA3, ERCC1, TRAF4	1.31E-03	glycerophospholipid metabolic process	3	SERN2C, SH3GLB1, FABP3	1.92E-02
blood vessel development	6	TGFB1, EDN1, PRRX1, MEIS1, SRF, WT1	8.41E-03	regulation of cell death	20	IRAK2, CDKSR1, CD3G, COL2A1, INHA, PMAIP1, BCL2L1, CIAPIN1, HRAS1, TGFB2, E24, CDKN1A, BAX, PPP2CB, FOXC2, NGRAP1, DCUN1D3, PHLDA3, ERCC1, TRAF4	1.39E-03	branching morphogenesis of a tube	3	EDNRA, FLT1, ILK	2.13E-02
embryonic skeletal system development	4	OSR2, TGFB1, PRRX1, DLK1	8.97E-03	skeletal muscle fiber development	5	ACTA1, DNER, TNC, MYOG, CHRNA1	1.50E-03	myofibril	3	DES, PDLIM5, ANKRD1	2.39E-02
vasculature development	6	TGFB1, EDN1, PRRX1, MEIS1, SRF, WT1	9.28E-03	cardiac muscle tissue morphogenesis	4	ACTC1, FOXC2, FKBP1A, TNF1	2.60E-03	tube development	4	EDNRA, FLT1, ILK, TGFB3	2.58E-02
neural crest cell development	3	EDNRB, EDN1, SOX9	1.25E-02	muscle tissue morphogenesis	4	ACTC1, FOXC2, FKBP1A, TNF1	2.60E-03	morphogenesis of a branching structure	3	EDNRA, FLT1, ILK	3.68E-02
neural crest cell differentiation	3	EDNRB, EDN1, SOX9	1.25E-02	muscle fiber development	5	ACTA1, DNER, TNC, MYOG, CHRNA1	2.85E-03	glycerolipid metabolic process	3	SERN2C, SH3GLB1, FABP3	3.90E-02
mesenchymal cell development	3	EDNRB, EDN1, SOX9	2.44E-02	positive regulation of neuron apoptosis	4	CDKSR1, BAX, PMAIP1, TGFB2	3.06E-03	angiogenesis	3	EDNRA, VEGFC, FLT1	4.12E-02
mesenchymal cell differentiation	3	EDNRB, EDN1, SOX9	2.63E-02	development of primary sexual characteristics	7	WNT5A, BAX, FST, BCL2L1, VGF, ERCC1, GJB2	5.87E-03				
mesenchyme development	3	EDNRB, EDN1, SOX9	2.73E-02	positive regulation of programmed cell death	11	CDKN1A, CDKSR1, E24, BAX, NGRAP1, BCL2L1, PMAIP1, INHA, DCUN1D3, PHLDA3, TGFB2	6.14E-03				

skeletal system morphogenesis	4	OSR2, TGFB1, PRRX1, SOX9	2.94E-02	negative regulation of cell growth	5	RTN4, E124, TRO, DCUN1D3, SERTAD1	6.18E-03
embryonic organ development	5	OSR2, TGFB1, EDN1, PRRX1, GLI2	3.56E-02	apoptosis	16	IRAK2, ACTC1, PMAIP1, BCL2L1, CIAPIN1, TGFB2, TNFRSF11B, BAX, SH3KBP1, NGFRAP1, POCDS, PHLD3, TRAF4, PHLDA1, CIB1, PEG3	6.59E-03
embryonic skeletal system morphogenesis	3	OSR2, TGFB1, PRRX1	4.30E-02	regulation of blood vessel size	5	ACTA2, NPPB, FOXC2, NPPA, TES	6.66E-03
sensory organ development	5	EDN1, PRRX1, JAG1, MEIS1, WT1	4.34E-02	programmed cell death	16	IRAK2, ACTC1, PMAIP1, BCL2L1, CIAPIN1, TGFB2, TNFRSF11B, BAX, SH3KBP1, NGFRAP1, POCDS, PHLD3, TRAF4, PHLDA1, CIB1, PEG3	7.67E-03
				induction of apoptosis	7	E124, BAX, NGFRAP1, PMAIP1, INHA, PHLDA3, TGFB2	4.79E-02
				induction of programmed cell death	7	E124, BAX, NGFRAP1, PMAIP1, INHA, PHLDA3, TGFB2	4.79E-02